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U.S. EPA

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Case No.: 02-9459A

Subject: GM Bedford Powertrain Facility

Quantity	Description
1	Environmental Indicator CA725 Report

Comments/Special Instructions:

Please find the attached copy of Environmental Indicator (EI) CA725 Report for the GM Bedford Powertrain Facility. A draft of the "Standard Procedure - Site Access Restriction Relating to Remediation Work" is included in Appendix C of the EI CA725 Report. GM is in the process of finalizing this procedure and a copy will be provided to U.S. EPA when it is finalized.

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**RESOURCE CONSERVATION AND RECOVERY ACT
ENVIRONMENTAL INDICATOR CA725 REPORT
DETERMINATION OF CURRENT HUMAN
EXPOSURES UNDER CONTROL**

**General Motors Powertrain Bedford Facility
105 GM Drive
Bedford, Indiana**

USEPA ID# IND 006 036 099

Prepared for:

General Motors Corporation

Prepared by:

ENVIRON International Corporation
Princeton, New Jersey

January 2005

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1.0 INTRODUCTION

1.1 Background

This Resource Conservation and Recovery Act (RCRA) Environmental Indicator (EI) Report was prepared in conjunction with the RCRA corrective action that General Motors Corporation (GM) is conducting at the Bedford Powertrain Facility located at 105 GM Drive in Bedford, Indiana (hereafter referred to as the “Facility”). The Facility’s EPA Identification Number is IND 006 036 099. The United States Environmental Protection Agency (USEPA) and GM signed a performance-based RCRA Corrective Action Agreement (Agreement) in March 2001, which was amended in October 2002.

As a result of work completed under the Agreement, GM and USEPA agreed in July 2003 to initiate a removal action under an administrative order on consent (AOC) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to expedite the completion of corrective measures at certain areas off the Facility while field investigations continue under the Agreement at the Facility.

Under Section V.2 of the Agreement, GM and USEPA set performance goals for completing the RCRA EI determinations for current human exposures under control (CA725) and groundwater migration under control (CA750) by January 2005 and April 2007, respectively. GM had discussed these goals with USEPA and the Indiana Department of Environmental Management (IDEM) at the outset of the corrective action work and during regular project status meetings thereafter.

In the RCRA facility investigation (RFI) completed to date, GM has performed activities to characterize the nature and extent of releases of hazardous waste and/or hazardous constituents at and around the Facility. These activities included preparation of a Current Conditions Report (CRA 2001a) that identified 24 areas of interest (AOIs) at the Facility, and described the physical conditions, historical operations, and any previous investigation or remedial action at each AOI. The AOIs included current waste management areas and other areas at the Facility for which GM has knowledge of past management of hazardous waste or hazardous constituents. The Current Conditions Report (CCR) evaluated each AOI and identified those where additional investigation

was warranted. The CCR also discussed previous environmental investigations conducted in the vicinity of the Facility.

Based on the information in the CCR, GM concluded that certain areas at the Facility and areas around the Facility warranted field investigation. GM determined that 22 AOIs required further investigation and prepared a RFI Work Plan (CRA 2001b) and RFI Work Plan Addenda No. 1 to No. 7 that described the objectives, approach, rationale, and procedures for these investigations. During the RFI field investigations, USEPA requested that five possible former fill areas around the Facility be identified as AOIs (AOIs 25 to 29) for investigation. The initial phase of the RFI field investigation also included a survey and sampling of off-site water wells (CRA 2001c) and a stream investigation (Exponent 2001).

The objective of the RFI field investigations was to collect data for determining whether a significant release of hazardous constituents had occurred at each area, and to characterize the extent of any release for determining whether the release poses unacceptable risk under current and reasonably expected future land use, or has adversely affected groundwater quality. The scope of the RFI field investigations included collection and analysis of soil, groundwater, sediment, surface water, and concrete wipe samples at the AOIs. The scope also included collecting various environmental and biological samples in areas along the main tributary of Bailey's Branch Creek and Pleasant Run, as well as in two tributaries located to the north and west of the Facility.

The on-Facility sampling locations are shown on Figure 1, which also shows the boundaries of the on-Facility areas investigated during the RFI. The off-Facility sampling locations were presented in RFI Technical Memoranda (CRA 2002a, 2003a; Exponent 2002) and in separate data summary reports for off-Facility properties, which were provided to USEPA, IDEM, and the property owners. The sampling locations at the possible former off-Facility fill areas (AOIs 25 to 29) are shown on Figure 2.

All the RFI field investigation work plans and addenda were submitted to and reviewed with USEPA and IDEM prior to their implementation. The field investigations were conducted in accordance with these work plans and addenda, except where field conditions necessitated changes. The data collected to date during the RFI and the details of the data collection activities are provided in reports that are listed in Section 1.2.

In addition to the RFI field investigation, GM also completed the following removal action and interim measures work plans under the AOC:

- Upstream Parcels Removal Action Work Plan (CRA 2003b) and addenda
- Parcel 22 Removal Action Work Plan (CRA 2003c)
- Site Source Control Work Plan (CRA 2003d) and addenda
- Downstream Parcels Removal Action Work Plan (CRA 2004a)
- Northern Tributary Interim Measures Work Plan (CRA 2004b)
- Western Tributary Interim Measures Work Plan (CRA 2004c)

These work plans provided for: the removal of soil and sediment from certain off-site areas to ensure protection of human health and the environment; verification sampling to confirm that the removal actions have achieved the final cleanup levels specified in the work plans; and prevention of re-contamination of these areas by controlling seeps and springs in the vicinity of the Facility. GM has completed the removal actions described in the Upstream Parcels Removal Action Work Plan and is completing installation of the collection system described in the Site Source Control Work Plan. GM is also initiating work under the other removal action and interim measures work plans, and expects to complete all off-site work described in these plans by 2006. In addition, GM is currently planning remediation of certain areas at the Facility as an early start to final corrective measures, although this remediation is not needed to address current exposures (CRA 2004g).

1.2 Purpose and Basis

The purpose of this EI Report is to evaluate the information and data that have been collected during the RFI that specifically pertains to the RCRA Corrective Action CA725 determination of whether current human exposures are under control at and around the Facility.

Information from the following sources was reviewed to support the evaluation of whether current human exposures at and around the Facility are under control:

- Current Conditions Report
- RCRA Facility Investigation Work Plan and Addenda No. 1 to No. 6
- Site Source Control Work Plan and Addenda No. 1 to No. 3
- Upstream Parcels Removal Action Work Plan and Addenda No. 1 to No. 5
- Parcel 22 Removal Action Work Plan
- Downstream Parcels Removal Action Work Plan
- RFI Technical Memorandum – Soil; Sediment; Surface Water; Wipe Sampling (Soil TM)
- RFI Investigation Groundwater Analytical Data Report

- Final Validated Data for Completed Test Pits – RFI Work Plan Addendum No. 4
- Off-Site Residential Well Survey and Sampling
- Data Delivery Package and Response to Comments – 2002 Cattle Sampling Program
- Bedford RFI Technical Memorandum 1, 2001 Stream Investigation Data Summary and addendum
- Technical Memorandum, Phase II Stream Investigations
- High and Low Flow Spring and Seep Sampling, May and June 2004
- RFI Quarterly Progress Reports
- Data packages to property owners and oral advice to the owners to avoid areas where removal actions or interim measures are to be conducted but have not yet been completed
- Project fact sheets, public meetings, and newspaper articles on warnings and advisories to residents and the general public about avoiding affected areas around the Facility
- Engineering controls (e.g., fences and warning signs), which have been implemented, inspected, and maintained since 2002

The complete citations for these documents are provided in Section 6. The reports and work plans listed above have been provided to USEPA and IDEM.

The remainder of this report is organized to follow USEPA's CA725 form (Interim Final 2/5/99), as follows:

- Section 2 addresses Question 2, which asks what environmental media are considered to have concentrations higher than appropriately protective risk-based screening levels. The RFI data used in the evaluation and the results of comparing these data to conservative risk-based screening criteria are summarized in this section.
- Section 3 addresses Question 3, which asks what current exposure pathways exist between media with constituent concentrations higher than screening criteria and human receptor populations. Information concerning current land use and human activity patterns at and around the Facility is discussed in this section.
- Section 4 addresses Question 4, which asks whether current human exposures for the complete pathways identified in Question 3 are expected to be significant.
- Section 5 provides a summary and conclusion of the CA725 determination at and around the Facility.

- Section 6 lists the references cited in this report.

Tables and figures are found at the end of the text. A completed CA725 form that is based on the discussion in this report is included in Appendix A. Appendix B provides calculations and related information that support the risk assessment results used in making the CA725 determination. Appendix C is a copy of the procedures that the Facility has in place to control access to certain on-site areas discussed in Section 4.1 of this report.

2.0 CONCENTRATIONS HIGHER THAN SCREENING CRITERIA

Question 2 of the CA725 form asks whether groundwater, soil, surface water, sediment, or air is known or reasonably suspected to contain constituent concentrations that are higher than appropriately protective risk-based screening levels from releases subject to RCRA corrective action.

In this report, the areas with constituent concentrations higher than appropriately protective risk-based screening levels in each medium are identified based on comparison of the RFI site characterization data with the conservatively protective risk-based screening criteria that are discussed in the following subsections. It should be noted that an area with constituent concentrations higher than these conservative screening criteria does not necessarily pose a significant risk; it only means that the area should be further evaluated in the subsequent questions of the CA725 determination.

The data used in the comparison do not include soil, sediment, surface water, and spring water data from areas where removal action has been completed at the time this report was prepared (i.e., Parcels 3 to 13 and Parcel 401). They also do not include data from areas that have been fenced as part of the mobilization activities for the removal action (i.e., Parcels 15, 20/296, 21, 22, and 23). These areas are not specifically evaluated in this report because no receptors are reasonably expected in these areas, except workers conducting the removal action who are protected by health and safety protocols that ensure their exposures will not be significant. Soil data being collected per RFI Work Plan Addendum No. 7 as part of the ongoing field investigation at AOI 21 also have not been included; however, fencing is in place to prevent workers and trespassers from contacting soil in this area. Finally, data determined to be unusable during data validation (i.e., R-qualified data) are not included in the comparison or used in subsequent evaluations discussed in this report. Concentrations qualified as estimated (e.g., J-qualified data) are included, and concentrations from duplicate pairs have been averaged to obtain a representative concentration for each duplicate pair. The analytical data for all samples (including those for constituents not detected, R-qualified data, and data for individual samples in duplicate pairs) were provided in the reports listed in Section 1.2.

2.1 Soil

The RFI characterization data for shallow soil (0 to 2 ft bgs) in on-site areas are summarized on Table 2-1a. For each area, Table 2-1a shows the detected constituents, their detection frequencies, their ranges of detected concentrations, and the ratios of the highest site-related concentrations in the area to risk-based screening criteria. Site-related concentrations are those in excess of background levels. Measured concentrations for all organic compounds are conservatively assumed to be site-related, and measured metal concentrations are adjusted for site-specific background levels that were estimated from site-specific data collected during the RFI (see Appendix B).

The risk-based screening criteria on Table 2-1a are derived from the USEPA Region 9 Preliminary Remediation Goals (PRGs) (2002) for industrial soil using a target cancer risk of 10^{-5} and a target hazard quotient (HQ) of 1. Soil with site-related concentrations higher than these criteria is evaluated further in Question 3 for the purposes of the CA725 determination. On Table 2-1a, the highest site-related concentration of each constituent in surface soil at an area is compared to the screening criteria by calculating the ratio of the highest site-related concentration to each criterion. Ratios higher than 1 are highlighted.

As shown on Table 2-1a, the ratios for certain constituents in surface soil are higher than 1 at AOIs 4, 4a, 5, 6, 15, 18, 21, 22, Parcels 205(GM), 215(GM), 216(GM), and Plant Boundary. Note that AOI 4a is the area along the streams to the north and east of AOIs 4 and 10. These constituents consist primarily of polychlorinated biphenyls (PCBs). The highest site-related concentrations of a few metals are higher than the screening criteria at AOIs 21 and 22.

Table 2-1b provides a summary of the RFI soil characterization data for subsurface soil (deeper than 2 ft bgs) in on-site areas. The highest site-related concentrations at each area are compared with the soil screening criteria based on the Region 9 PRGs for industrial soil, as discussed above. As shown on Table 2-1b, the ratios for certain constituents in subsurface soil are higher than 1 at AOIs 4, 5, 6, 8, 9, 11, 15, and 21. These constituents consist primarily of PCBs. Arsenic was found to have site-related concentrations higher than the screening criterion at AOIs 6, 11, and 21, while lead and mercury were found to have site-related concentrations higher than the screening criteria at AOI 4. One volatile organic compound (VOC), 1,4-dichlorobenzene, was found to have a concentration slightly higher than the screening criterion at AOI 6.

Table 2-1c provides a summary of the RFI soil characterization data for surface soil (0-2 ft bgs) in off-site areas. The highest site-related concentrations at each area are compared with risk-based screening criteria that are derived from the USEPA Region 9 PRGs (2002) for residential

soil using a target cancer risk of 10^{-5} and a target hazard quotient (HQ) of 1. The screening criterion for PCBs is 2 mg/kg, which is the site-specific soil cleanup level for the removal action when rounded to one significant digit (CRA 2003b; 2003c; 2004a). The highest site-related concentration of each constituent in surface soil at an area is compared to the screening criteria by calculating the ratio of the highest site-related concentration to each criterion.

As shown on Table 2-1c, the ratios for PCBs in surface soil are higher than 1 at some of the possible former fill areas (AOIs 25, 26, and 27) and at Parcels 2, 23, 24, 25, 27, 28, 29, 30, 36, 37/237, 38, 39, 40, 57, 72, 76(GM), 78, 81, 202/203/204, 217, 364, 384/386, 393, 396, 398, and 400, and 1207 Third Street. However, the concentration of PCBs at 1207 Third Street that is higher than the screening criterion was from the crawlspace under the residence and determined to be laboratory measurements that were likely affected by interference from the presence of a pesticide (chlordane) in the crawlspace soil that is not site-related. As such, the apparent concentrations of PCBs at this property do not warrant evaluation in Question 3. The highest site-related concentrations of a few semi-volatile organic compounds (SVOC) and metals are higher than the screening criteria at AOI 25 and at Parcels 217, 384/386, and 398.

Table 2-1d provides a summary of the RFI soil characterization data for subsurface soil (deeper than 2 ft bgs) in off-site areas. The highest site-related concentrations at each area are compared with the soil screening criteria based on the Region 9 PRGs for residential soil, as discussed above. As shown on Table 2-1d, the ratios for PCBs and a few metals in subsurface soil are higher than 1 at AOIs 25, 26 and 27, Parcels 2, 25, 28, 217, 384/386, and 398.

2.2 Groundwater

Groundwater quality data from monitoring wells collected during the RFI to date are summarized on Table 2-2. The locations of the monitoring wells are shown on Figure 1. Table 2-2 shows the detected constituents, their detection frequencies, range of detected concentrations, and the ratios of the highest measured concentrations to the screening criteria for groundwater in each saturated zone, including overburden, shallow bedrock, and deep bedrock.

The screening criteria on Table 2-2 are state and federal drinking water maximum contaminant levels (MCLs) or equivalent drinking water limits using USEPA's standard default exposure factors (i.e., 2 L/day, 350 days/year, 30 years, and 70 kg body weight) for chemicals without MCLs. It should be noted that there is no known active drinking water well at the Facility or at any residences within the half-mile radius area around the Facility covered in the water-well survey; potable water at and around the Facility is supplied by the City of Bedford and North Lawrence Water Corporation (CRA 2002a).

Groundwater that warrants further evaluation in Question 3 of the CA725 determination is identified on Table 2-2 by comparing the highest concentration of each constituent detected in groundwater for each well zone sampled at an area to the screening criteria. Ratios higher than 1 are highlighted. As shown on Table 2-2, several constituents in on-site groundwater have concentrations that are higher than the screening criteria based on drinking water exposures. These constituents consist primarily of PCBs and certain metals. Two VOCs (chlorobenzene and vinyl chloride) and one SVOC (bis(2-ethylhexyl)phthalate) have concentrations in on-site groundwater that are slightly higher than the screening criteria. No constituent in samples collected from the off-site groundwater monitoring wells installed to date as part of the ongoing groundwater investigation has a concentration that is higher than the screening criteria based on drinking water exposures.

2.3 Sediment

The RFI characterization data for on-site sediment are summarized on Table 2-3a, which shows the detected constituents, their detection frequencies, their ranges of detected concentrations, and the ratios of the highest measured concentrations to the screening criteria. The industrial soil screening criteria that are discussed in Section 2.1 are conservatively used as the screening criteria for these sediment data because USEPA has not established any generic health-based sediment screening criteria. The highest concentration of each constituent in sediment is compared to the screening criteria by calculating the ratio of the highest concentration to each criterion. Ratios higher than 1 on Table 2-3a are highlighted. As shown on Table 2-3a, the ratios for certain constituents are higher than 1 at AOI 4, AOI 10, Parcel 215(GM), and Parcel 216(GM). These constituents consist of PCBs, arsenic, and iron.

Table 2.3b provides a summary of the RFI sediment characterization data for off-site areas. The residential soil screening criteria that are discussed in Section 2.1 are conservatively used as the screening criteria for these sediment data because USEPA has not established any generic health-based sediment screening criteria. As shown on Table 2-3b, the ratios for certain constituents are higher than 1 at Parcels 2, 23, 25, 28, 30, 31, 36, 38, 39, 40, 41, 44, 45, 47, 60, 61, and 384/386. These constituents consist primarily of PCBs, arsenic, and iron. Benzo(a)pyrene was also found to have concentrations higher than the screening criterion at Parcels 2 and 36, and manganese was also found to have concentrations higher than the screening criterion at Parcels 2 and 40.

The ratios shown in Tables 2-3a and 2-3b are calculated using concentrations that have not been adjusted for background levels of metals in sediment, because site-specific sediment background data have not been collected during the RFI. However, the metal concentrations that are higher

than the screening criteria can be compared to regional background levels that have been published in the literature. The 95th percentile background metal concentrations in sediment from Lawrence County, Indiana (Wente 1994) are included on Tables 2-3a and 2-3b for comparison.

Comparison of the metal concentrations that are higher than the screening criteria with the regional background levels shows that these metal concentrations are lower than the background levels in sediment, except for the arsenic concentration at AOI 10, the arsenic and iron concentrations at Parcels 215(GM) and 216(GM), and the manganese concentrations at Parcels 2 and 40. As such, most of the metal concentrations in sediment that are higher than the screening criteria are considered to be within background levels and not site-related, and do not warrant evaluation in Question 3. The metal concentrations in sediment at AOI 10 and Parcels 215(GM), 216(GM), 2, and 40 are evaluated further in Question 3.

2.4 Surface Water

The RFI surface water characterization data are summarized on Table 2-4, which shows the detected constituents, their detection frequencies, their ranges of detected concentrations, and the ratios of the highest measured concentrations to the screening criteria. The drinking water criteria discussed in Section 2.2 are conservatively used as the screening criteria for these data. Ratios higher than 1 on Table 2-4 are highlighted.

As shown on Table 2-4, the ratios for certain constituents are higher than 1 at AOI 1, 4, 6, 10, and Parcel 201(GM), 215(GM), 216(GM), 31, 39, 47, 61, 384/386, and 400. The primary constituent in surface water samples with concentrations higher than the screening criteria is PCBs. Bis(2-Ethylhexyl)phthalate and antimony were detected at concentrations slightly higher than the screening criteria at AOI 1. The highest concentrations of a few metals are also higher than the screening criteria at Parcel 215(GM), Parcel 31, and Parcel 47.

2.5 Spring Water

The RFI spring water characterization data are summarized on Table 2-5, which shows the detected constituents, their detection frequencies, their ranges of detected concentrations, and the ratios of the highest measured concentrations to the screening criteria. The drinking water criteria discussed in Section 2.2 are conservatively used as the screening criteria for these data. Ratios higher than 1 on Table 2-5 are highlighted.

As shown on Table 2-5, constituents in spring water samples with concentrations higher than the screening criteria are located at AOIs 4, 4a, and 10, and Parcels 27 and 384/386. The

constituents in spring water samples with concentrations higher than the screening criteria are PCBs and a few metals.

2.6 Residential Well Water

Water samples were collected from inactive residential wells within a half-mile radius around the Facility and analyzed for PCBs during the residential well survey (CRA 2002a). Subsequently, additional water samples were collected from residential wells that were identified by the owners of several properties that are located outside the residential well survey area. The data from these samples are summarized on Table 2-6, which shows the detection frequencies, the range of detected concentrations, and the ratio of the measured concentrations to the drinking water standard for PCBs (0.0005 mg/L). Ratios higher than 1 on Table 2-6 are highlighted.

As shown on Table 2-6, several unfiltered water samples had detectable concentrations of PCBs. The concentrations of PCBs in the samples from Parcels 20/296, 208, and 414 are higher than the drinking water standard. However, no PCBs were detected in any filtered water samples. It should be noted that none of the residential wells sampled during the RFI are known to be used for drinking water or non-drinking water purpose, except for the one at Parcel 292. To GM's knowledge, the well at Parcel 292 provides potable water for the residence at the property. This well is located outside of the half-mile radius for the well survey, and was sampled for PCBs at the resident's request. No PCBs were detected in either filtered or unfiltered water samples from Parcel 292.

2.7 Other Matrices

Chemical characterization data were collected for liquid samples (which include a non-aqueous phase) found in a monitoring well at AOI 1 and in an inoperable residential well at Parcel 207 during the RFI. These data were conservatively compared with the drinking water criteria discussed in Section 2.2. Table 2-7 provides a summary of the liquid characterization data, which shows that PCBs and some metals detected in the liquid samples have concentrations higher than the drinking water screening criteria.

Wipe samples were collected from the two former PCB storage areas (AOI 3) as well as from two residences (Parcel 13 and 302 L Street). In addition, rock chip samples were collected from landscaping rocks at Parcel 13. These samples were analyzed for only PCBs. Analytical results for all wipe samples were non-detect at a detection limit of 4 µg per 100 square centimeters. Analytical results for all chip samples were either non-detect or below the screening criterion for residential soil. These results were described in the Soil TM (CRA 2004d) and in the data packages provided to the property owners.

Ambient air quality monitoring data have been collected from the perimeter of the removal action work areas to evaluate the potential for exposure to fugitive air emission downwind of the work areas. The air monitoring data include short-term and 24-hour measurements of total suspended particulates (TSPs) and PCBs. These data were evaluated in accordance with the provisions of the air monitoring plan specified in the Upstream Parcels Removal Action Work Plan to determine if modifications to work procedures are necessary. These air monitoring results have been presented in monthly progress reports for the AOC Removal Action, and are not repeated here.

Ambient air samples were not collected as part of the RFI site characterization effort because potential exposures via inhalation of soil vapors and particulates in ambient air are expected to be insignificant. As shown in the risk calculations provided in Appendix B, risk estimates for inhalation exposures to PCBs (the predominant constituents found during the RFI) are always insignificant relative to those for soil ingestion and dermal contact exposures. For example, the risk estimates for the inhalation pathway for PCBs account for approximately 10% of the total risk estimate for routine workers and less than 5% of the total risk estimate for residents.

In addition to the sampling of environmental media discussed above, biological samples were also collected during the RFI. Aquatic biota samples, including whole-body samples of crayfish and forage fish, were collected and analyzed for PCBs and mercury during the 2001 stream investigation to support ecological evaluation (Exponent 2002). No game fish of edible size was found in the streams near the Facility. Animal tissue and fat samples were collected from the cattle herd formerly located at Parcel 38 (CRA 2002b), and from two deer carcasses in the area. A deer meat sample was also provided by a resident in the area. These samples were analyzed for PCBs and lipid content. Analytical results for these samples were either non-detect or below the Food and Drug Administration (FDA) tolerance level of 3 mg/kg (fat basis) for red meat. Finally, several plant tissue (corn, hay, and canned produce) samples were collected from Parcels 39, 40, and 390/392 for PCBs analysis. PCBs were not detected in any of these samples, except in a few of the hay samples collected from Parcel 40. However, the detected concentrations of PCBs in these hay samples are lower than FDA's recommended value of 0.2 mg/kg for animal feed that is fed to food-producing animals (21 CFR 109.30).

The potential for human exposure to constituent concentrations that are higher than screening criteria is discussed in Section 3, and the significance of any potential exposure is discussed in Section 4.

3.0 EXPOSURE PATHWAYS

Question 3 of the CA725 form asks whether there are complete exposure pathways between potential human receptors and the media with constituent concentrations higher than the screening criteria identified in Question 2 such that exposures can be reasonably expected under current conditions. The potential for exposure to the media identified in Section 2 under current conditions on and off the Facility is discussed in this section. The discussion below is based on land use information presented in the Current Conditions Report (CRA 2001a), Upstream Parcels Removal Action Work Plan (CRA 2003b), and Downstream Parcels Removal Action Work Plan (CRA 2004a). The potential significance of exposures via the complete pathways identified in this section is discussed in Section 4.

3.1 On-Facility

The following subsections discuss the potential for receptors to be currently exposed to media at the Facility identified in Section 2.

3.1.1 Routine Workers

The main receptor population at the Facility consists of “routine workers” who typically spend most of the workday indoors performing manufacturing activities. This population has a potential to be exposed to surface soil via direct contact in unpaved outdoor areas during limited time outdoors, and via vapor intrusion from soil that is under occupied buildings. Table 3-1 identifies the AOIs that currently have unpaved areas with surface soil or have occupied buildings.

As shown on Table 3-1, routine workers have the potential to contact surface soil in unpaved areas at AOIs 4, 4a, 5, 6, 15, 21, 22, Plant Boundary, and Parcels 205(GM), 215(GM), and 216(GM). Soil with constituent concentrations higher than the screening criteria is also present at AOIs 8, 9, and 21, which are partially or completely covered by occupied buildings, as shown in Figure 1 and on Table 3-1. However, no volatile constituents with concentrations higher than screening criteria are present in the soil at these AOIs, as shown in Tables 2-1a and 2-1b. Therefore, no exposure pathway exists for vapor intrusion from soil. The significance of potential exposure of routine workers to surface soil at unpaved areas is discussed in Section 4.

Groundwater is not used as a potable or nonpotable water supply at the Facility; the Facility obtains water from the City of Bedford for potable and nonpotable uses. Therefore, no exposure to groundwater via potable or nonpotable use currently exists at the Facility. Groundwater with constituent concentrations higher than screening criteria is present at AOIs 8 and 21, which are partially covered by occupied buildings, as shown in Figure 1 and on Table 3-1. However, no volatile constituents with concentrations higher than screening criteria are present in groundwater at these AOIs, as shown in Table 2-2. Therefore, no exposure pathway exists for vapor intrusion from groundwater.

3.1.2 Construction Workers

A small fraction of the Facility's workers ("construction workers") conduct occasional subsurface construction or maintenance activities (e.g., installation or repair of underground utilities, or removal or repair of pavement). These activities are covered by the Facility's health and safety protocols, which require workers to wear proper personal protective equipment and follow proper procedures to ensure that no significant exposure to soil and groundwater would occur.

Although the Facility intends to maintain controls over on-site construction activities, an evaluation was conducted to assess the possibility of significant exposure to soil, groundwater, and spring water if such activities were to be conducted without the benefit of the Facility's health and safety protocols. This evaluation was conducted to provide early identification of locations at the Facility where subsurface media that are within the reasonably expected maximum excavation depth of 10 feet may eventually warrant corrective measures, even though the locations do not warrant interim measures now to address current exposures. The results from the evaluation of this hypothetical scenario are discussed in Section 4.

3.1.3 Trespassers

Fencing and security personnel control access to most portions of the Facility, so that trespassing is unlikely, and if to occur, would be possible only at limited locations and for short periods. Table 3-1 shows that all the areas identified in Section 2 are within the Facility's fencing, except Parcel 201(GM). In addition, part of the Plant Boundary (near the baseball field) can be accessed by the public. Parcel 201(GM) has surface water with a PCB concentration higher than the screening criterion, and Plant Boundary has surface soil (near the baseball field) with a PCB concentration higher than the screening criterion. The significance of potential exposures of trespassers to surface water and surface soil at these two areas is discussed in Section 4.

3.2 Off-Facility

The following subsections discuss the potential for receptors to be currently exposed to media at areas away from the Facility identified in Section 2.

3.2.1 Residents

Constituents with concentrations higher than screening criteria are present in media at properties that border certain sections of Bailey's Branch, Pleasant Run, and the northern and western tributaries where removal action has not yet been completed. Table 3-2 identifies which properties are currently occupied by residents and which are owned by GM.

Table 3-2 shows that residents currently occupy many of the properties where constituent concentrations higher than screening criteria are present in soil, sediment, surface water, or water from inactive residential wells. However, exposure of residents to soil, sediment, and surface water with concentrations higher than screening criteria is highly unlikely because: 1) they have been informed of the investigation results and advised to avoid these portions of their properties until the removal action is completed; 2) the areas with constituent concentrations higher than screening criteria are generally remote from the residences; and 3) access to these areas is generally difficult due to rough terrain and/or heavy vegetation.

Although it is reasonable to expect that residents are heeding the advice to avoid portions of their properties, an evaluation was conducted to assess the possibility of significant exposures if residents were to unintentionally contact surface soil in these areas on occasion because these areas are not fenced or otherwise visibly demarcated. The results from the evaluation of this hypothetical scenario are discussed in Section 4.

As noted in Section 2.6, residences around the Facility are not using groundwater with constituent concentrations higher than screening criteria for drinking water or other purposes. Therefore, residents are not currently exposed via well water.

3.2.2 Trespassers

Trespassers could come into contact with soil, sediment, surface water, and spring water along certain sections of Bailey's Branch, Pleasant Run, and the northern and western tributaries where removal action has not yet been completed. However, routine trespasser contact with these areas is unlikely because the general public in and around the City of Bedford has been informed of the investigation results and advised to avoid these areas. Warning signs also have been posted and maintained at potentially accessible points to the streams since 2002.

If trespassing into these areas were to occur despite the warnings, it could occur via the parcels bordering these areas that are not currently occupied by residents (see Table 3-2), or via access points to the stream where Warning Signs 10, 11, and 12 are posted (see Figure 3). The locations where other warning signs have been posted are now fenced to facilitate the removal action along those stream sections. The potential for trespassers to gain access to the stream from other locations (including from unoccupied parcels) is low because the areas along the stream generally have rough terrain and/or heavy vegetation. The significance of potential exposure of trespassers to soil and spring water at unoccupied parcels and to stream bank soil, sediment, and surface water at the stream near Warning Signs 10 to 12 is discussed in Section 4.

3.2.3 Construction Workers

Workers who perform construction or maintenance in the vicinity of the Facility could come into contact with surface and subsurface soil (to a reasonably expected maximum excavation depth of 10 feet). Potential exposure of these workers via contact with spring water is also possible. Their activities in the areas with constituent concentrations higher than screening criteria are expected to be of limited duration (e.g., installation or repair of utilities). The significance of these potential exposures is discussed in Section 4.

4.0 SIGNIFICANCE OF POTENTIAL EXPOSURES

Question 4 of the CA725 form asks whether exposure from the complete exposure pathways identified under Question 3 can be reasonably expected to be "significant" or unacceptable. The significance of the potential exposures for the receptors and areas that are identified as complete pathways in Section 3 is discussed below. The results from the evaluation of the hypothetical scenarios discussed in Section 3.1.2 (on-site construction workers) and Section 3.2.1 (residents) are also discussed in the following subsections, even though they are not representative of current exposures.

The significance of the potential exposures identified in Section 3 was evaluated by estimating cumulative cancer and noncancer risks for each receptor and comparing the risk estimates to the USEPA-established levels for determining whether corrective measures are warranted under RCRA corrective action. Under USEPA policy, corrective measures are not warranted when the site-related cumulative cancer risk does not exceed 10^{-4} and the noncancer hazard index (HI) does not exceed 1 (61 FR 19432, May 1, 1996; USEPA 1991b). Therefore, the exposures evaluated in this CA725 determination are not significant or unacceptable when the estimates of site-related cumulative cancer risk and noncancer HI do not exceed 10^{-4} and 1, respectively. For lead, USEPA (2003b) evaluates the significance of exposures using blood lead level as an index of exposure, rather than cancer risks or noncancer HQs. Therefore, the significance of potential exposure to lead is discussed separately in this section. The cancer and noncancer risk calculations, and lead exposure calculations for the receptors discussed below are provided in Appendix B.

4.1 On-Facility

4.1.1 Routine Workers

The cumulative cancer and noncancer risk estimates for the potential exposure of routine workers to soil were calculated using USEPA-recommended standard default exposure factors (USEPA 1991a), which are highly conservative for current conditions at the Facility. For example, these default exposure factors assume that workers spend their entire day in contact with soil in an area, but workers at the Facility actually spend most of the day manufacturing products indoors and do not stay outdoors in one area for the whole day. However, these

conservative assumptions were used so that the risk estimates could be used to provide early identification of areas at the Facility where corrective measures should be considered, even though these areas may not warrant interim measures now to address current exposures.

Risk estimates for each AOI identified in Section 3.1.1 were developed by first calculating upper-bound risk estimates using the highest constituent concentrations in surface soil at each AOI. These upper-bound estimates were examined to identify the constituents that contributed most significantly to the cumulative risk estimates for each AOI. For these constituents, the 95% upper confidence limit (UCL) on the mean was calculated if at least eight samples are available. The 95% UCLs were calculated using the nonparametric bootstrap method called the bias-corrected and accelerated (BCa) method (Efron and Tibshirani 1998). At locations where samples were collected from multiple depths within the surface soil (0 to 2 ft bgs), the highest concentration was conservatively used in the 95% UCL calculations. The data used in the 95% UCL calculations and the calculation results are discussed in Appendix B.

Table 4-1 shows the high-end site-related cumulative cancer and noncancer risk estimates for exposure of routine workers to constituents in surface soil, based on 95% UCLs for constituents with the most potentially significant concentrations and the highest detected concentrations for other constituents. For AOIs 15, and 22 (where less than eight samples are available) and the Plant Boundary (where the sampling locations do not comprise a single exposure unit), the risk estimates on Table 4-1 are based entirely on the highest constituent concentrations detected at each AOI.

As shown in Table 4-1, the high-end risk estimates do not exceed USEPA's cancer risk and HI limits for AOI 21, P205(GM), and P216_east; but they do exceed the limits for AOIs 4, 4a_south, 4a_west, 5, 6, 15, 22, P215_area, and P216_west, and the Plant Boundary. Among the latter group of areas, PCBs contributed the most significantly to the risk estimates, except at AOI 22 where antimony contributed the most significantly. As noted above, however, the high-end risk estimates on Table 4-1 are based on the highly conservative assumption that workers spend their entire workday in contact with soil at each area. As such, they overstate the risks associated with reasonable maximum exposures under current conditions at the Facility where workers rarely spend an entire day in contact with soil at one area.

To address the potential for significant exposures at the areas with risk estimates that exceed the USEPA limits, additional risk calculations were performed to identify the locations where controls to restrict worker contact with surface soil would be prudent if they are not already in place. The identified locations, depth intervals, and constituent concentrations that contributed

the most significantly to the risk estimates are listed on Table 4-2. To verify that controls at these locations would be adequate, risk calculations were repeated without using data from these locations. Table 4-3 shows that these calculations give cumulative cancer and noncancer risk estimates that do not exceed the USEPA-established limits.

The locations listed in Table 4-2 have been fenced and/or gated, and plant security or remediation personnel are stationed at some locations during certain times to control access. To further enhance access control, signs have been posted to direct persons seeking access to plant security, and procedures for approving work in these areas have been incorporated into the Plant's ISO 14001 certified Environmental Management System. A copy of the procedures is included in Appendix C.

For evaluating adult exposure to soil lead, USEPA has recommended a blood lead modeling methodology for deriving a criterion that is protective of routine worker exposure to lead in soil. Criterion derived using this methodology can range from approximately 750 mg/kg to 1,750 mg/kg, with an average of approximately 1,000 mg/kg (USEPA 2003b). As shown in Table 2-1a, the highest site-related concentrations of lead in soil are higher than the range of screening criterion at AOIs 21 and 22. However, as USEPA discussed in the regulations at 40 CFR Part 745, the soil lead screening criterion should be compared with the arithmetic mean concentration of lead within the area where potential exposures are assumed to occur, for consistency with the principles underlying the blood lead modeling approach used in deriving the screening criterion. As shown in Appendix B, the mean concentrations of lead in surface soil at these AOIs (not including the SS-X031Y124 location identified in Table 4-2) are below the USEPA range of screening criterion for worker exposure to soil lead.

In summary, the Facility has put procedures in place to restrict worker access to the locations listed on Table 4-2, so that the potential for current exposure of routine workers to surface soil at the Facility is insignificant. In addition, GM is planning to remediate these areas, even though remediation is not needed to control current exposures.

4.1.2 Construction Workers

As discussed in Section 3.1.2, an evaluation was conducted to provide early identification of locations at the Facility where subsurface conditions within the reasonably expected maximum excavation depth of 10 feet may eventually warrant corrective measures, even though the Facility's health and safety protocols currently ensure that no significant exposure would occur during subsurface construction and maintenance activities.

In the evaluation conducted, cumulative cancer and noncancer risk estimates for the potential exposure of construction workers to soil, groundwater, and spring water at the Facility were calculated using site-specific exposure factors that are intended to estimate reasonable maximum exposures during occasional excavations associated with maintenance activities and minor construction. The exposure factors used in the calculations are discussed in Appendix B. The results of the evaluation for soil are discussed first, followed by discussion of the results for groundwater and then spring water.

4.1.2.1 Soil

Initial estimates of cumulative cancer risk and HI for exposure of construction workers to soil were conservatively calculated using the highest soil concentrations detected in the 0 to 10 ft depth interval at each area. As shown in Table 4-4, these upper-bound risk estimates are within USEPA's acceptable cancer and noncancer risk limits at most of the areas identified as having soil with constituent concentrations higher than screening criteria, the exceptions being AOIs 5, 6, 9, and 11. For these exceptions, another set of cumulative cancer and noncancer risk estimates (high-end estimates) were calculated using 95% UCLs based on the highest soil concentrations in the 0 to 10 ft depth interval at each boring location for chemicals that contributed significantly to the initial upper-bound risk estimates, and the highest soil concentrations detected in the 0 to 10 ft depth interval for the other chemicals. For AOI 11 - Aboveground Storage Tanks (ASTs), the 95% UCL calculation includes data within the areas immediately adjacent to the ASTs that are east of GM Drive (and none of the AOI 11 soil data west of GM Drive have constituent concentrations higher than the screening criteria). As discussed above, using 95% UCLs instead of the highest concentrations provides more representative estimates of exposure concentrations (USEPA 1989).

As shown in Table 4-5, the high-end cancer risk and/or HI estimates are within USEPA's acceptable risk limits for AOI 11, but are still higher than the limits for AOIs 5, 6, and 9. For these latter AOIs, PCBs contributed the most significantly to the risk estimates. Additional risk calculations were then performed for these AOIs to identify the locations and depth intervals where special attention to proper procedures for subsurface construction activities is warranted. The identified locations, depth intervals, and concentrations of PCBs for all samples collected at or above the identified depth intervals are listed on Table 4-6. To verify that these are the only locations that warrant special attention, risk calculations were repeated without using data from these locations. Table 4-7 shows that these calculations give cumulative cancer and noncancer risk estimates that do not exceed the USEPA-established limits. Procedures for approving any subsurface construction activities in the areas that are identified on Table 4-6 have been

incorporated into the Plant's ISO 14001 certified Environmental Management System. A copy of the procedures is included in Appendix C.

The highest site-related lead concentrations in soil are higher than the range of soil lead screening criterion at AOIs 4, 21, and 22 (Tables 2-1a and 2-1b). As discussed in Section 4.1.1, the soil lead criterion is derived using blood lead modeling and should be compared to the mean concentration in an AOI. As shown in Appendix B, the mean concentrations of lead in the depth-average soil from the 0 to 10 ft depth interval at these AOIs (not including the SS-X031Y124 location identified in Table 4-2) are below the USEPA range of screening criterion for worker exposure to soil lead.

As discussed in Section 3.1.2, the Facility already has health and safety procedures in place to ensure protection of workers during subsurface construction activities (including at the locations listed on Table 4-7), so that the potential for current exposure of construction workers to surface and subsurface soil at the Facility is insignificant.

4.1.2.2 Groundwater

Upper-bound estimates of cumulative cancer risk and HI for exposures of construction workers to shallow groundwater were conservatively calculated using the highest concentrations detected in groundwater within 10 ft of ground surface (i.e., in the overburden or shallow bedrock) for each area identified on Table 3-1 as having groundwater concentrations higher than screening criteria within this depth interval (or where the depth has not been determined). As shown in Table 4-8, these upper-bound risk estimates are within USEPA's acceptable cancer and noncancer risk limits at all the areas. Therefore, the hypothetical exposure of construction workers to shallow groundwater at the Facility, even in the absence of specific health and safety protocols, is insignificant.

4.1.2.3 Spring Water

Upper-bound estimates of cumulative cancer risk and HI for exposures of construction workers to spring water were conservatively calculated using the highest spring water concentrations at each area identified in Section 2.5. As shown in Table 4-9, these upper-bound risk estimates are within USEPA's acceptable cancer and noncancer risk limits at all the areas.

A screening criterion for worker exposure to lead in spring water was derived by adapting USEPA's methodology for deriving the screening criterion for worker exposure to soil lead, as described in Appendix B. The range of criterion calculated for construction worker exposure to lead in spring water is 74 to 173 mg/L. The highest detected concentration of lead in spring

water at AOI 4, the only area with lead concentration in spring water higher than the drinking water standard, is well below the range of the criterion.

Therefore, the hypothetical exposure of construction workers to spring water at the Facility, even in the absence of specific health and safety protocols, is insignificant.

4.1.3 Trespassers

As discussed in Section 3.1.3, complete pathways for trespasser exposure at the Facility are limited to contact with surface water at Parcel 201 (GM) and contact with surface soil at the Plant Boundary (near the baseball field).

4.1.3.1 Surface Water

The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to surface water at Parcel 201 (GM) were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespasser to surface water at this location. The exposure factors used in the calculations are discussed in Appendix B. As shown in Table 4-10, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers at the Facility is insignificant.

4.1.3.2 Surface Soil

The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to surface soil at the Plant Boundary (near the baseball field) were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespasser to surface soil. The exposure factors used in the calculations are discussed in Appendix B. As shown in Table 4-10, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers to surface soil at the Plant Boundary is insignificant.

4.2 Off-Facility

4.2.1 Residents

As discussed in Section 3.2.1, an evaluation was conducted to assess the possibility of significant exposures if residents were to unintentionally contact soil with constituent concentrations higher than screening criteria at their properties on occasion, even though they are generally heeding advice to avoid these areas. In conducting this evaluation, risk estimates known to overstate significantly the risks associated with reasonable maximum exposures were calculated first. These calculations used standard default exposure factors (USEPA 1991a) and assumed that

residents have equal chance of contact with surface soil at all points on their properties, even though they are actually spending little if any time in the areas to be avoided. The risk estimates for these hypothetical exposures are then interpreted considering that residents actually have a much lower chance of contact with surface soil with constituent concentrations higher than screening criteria.

The risk estimates for the hypothetical exposures were based on area-weighted concentrations for PCBs and the highest detected concentrations for other constituents (if applicable). Where multiple soil samples were collected from the top 2 feet at a sampling location, the highest concentrations among these surface soil samples were used. Area-weighting of PCBs concentrations was accomplished by tessellating the property with Thiessen polygons at each location with PCBs data. In this approach, each point at the property is assigned the PCBs concentration of its nearest sampling location. Figures that show the tessellation for each property are provided in Appendix B.

The use of area-weighted concentrations was necessary because the soil sampling locations at the properties are generally concentrated in relatively small areas (e.g., along the stream's floodplain) where the characterization of concentration distributions was the most important. In general, large parts of the properties, including where the actual residences are located, do not have soil with constituent concentrations higher than screening criteria and are represented by relatively few soil samples. The area-weighted approach ensures that sampling locations that best represent where residents spend most of their time are not underrepresented in exposure estimates. However, using area-weighted concentrations to represent concentrations to which residents could be exposed is still highly conservative, since it assumes that residents have an equal chance of contact with all points of the property when they are actually avoiding areas that have soil with constituent concentrations higher than screening criteria.

The risk estimates for the hypothetical exposures are shown in Table 4-11. These cumulative cancer risk and HI estimates do not exceed the USEPA limits, although some HI estimates are at or near the limit of 1. These results should not be interpreted to mean that exposures at the properties with HI estimates of 1 (or near 1) are nearly unacceptable. Rather, these results show that residents could unintentionally enter areas of their property that contain soil with constituent concentrations higher than screening criteria at unreasonably high frequencies without having a significant exposure.

As discussed above, the assumption that residents have equal chance of contact with all points on their properties is not realistic. The effects of using more realistic assumptions to account for the

much lower likelihood of residents contacting areas that have soil with constituent concentrations higher than screening criteria can be demonstrated by using a time-weighted approach in combination with the area-weighted approach. For example, if one were to assume (arbitrarily but conservatively) that residents are half as likely to enter areas that have soil with concentrations of PCBs higher than the screening criterion as the other areas at the properties where PCBs contribute the most significantly to the HI estimate, it can be shown that the exposure concentrations for PCBs based on this assumption would be approximately half of those used in calculating the risk estimates shown on Table 4-11 (see Appendix B). More realistically, residents might be no more than one-tenth as likely to enter the areas that have soil with concentrations of PCBs that are higher than the screening criterion at these properties, which means that the exposure concentrations for PCBs would be no more than approximately one-tenth of those used in calculating the risk estimates on Table 4-11 (see Appendix B).

The highest site-related lead concentration in surface soil at Parcel 398 is higher than the residential screening criterion (Table 2-1c). As discussed in Section 4.1.1, the soil lead criterion is derived using blood lead modeling and should be compared to the mean concentration in the area where potential exposure is being evaluated. As shown in Appendix B, the mean concentration of lead in the surface soil at Parcel 398 is below the USEPA screening criterion for residential exposure to soil lead.

Therefore, it can be seen that the possible exposure of residents from unintentional contact with areas of their properties that have soil with constituent concentrations higher than screening criteria is insignificant.

4.2.2 Trespassers

As discussed in Section 3.2.2, trespassers could either contact soil and spring water at properties that are not occupied by residents or contact sediment, surface water, and stream bank soil in segments of streams that are accessible from certain public locations (shown on Figure 3).

4.2.2.1 Unoccupied Properties

The cumulative cancer and noncancer risk estimates for the potential exposure of trespassers to surface soil at properties that are not occupied by residents were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespassers to surface soil, and using the area-weighted approach for estimation of exposure concentrations discussed in Section 4.2.1. The exposure factors used in the calculations are discussed in Appendix B. As shown in Table 4-12, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits.

The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to spring water at properties that are not occupied by residents were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespassers to spring water. The exposure factors used in the calculations are discussed in Appendix B. As shown in Table 4-13, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits.

Therefore, the potential for current exposure of trespassers to soil and spring water at the unoccupied properties is insignificant.

4.2.2.2 Streams

The cumulative cancer and noncancer risk estimates for the potential exposure of trespassers to sediment, surface water, and stream bank soil in stream segments that are accessible were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespasser to these media, as discussed in Appendix B. Trespassers are conservatively assumed to be exposed to the highest concentrations found in sediment, surface water, and soil within a half-mile radius of the access point (Warning Signs 10 to 12) and 30 feet of the stream center (including the area between the northern and southern branches), as shown in Figure 3. The upper-bound estimates of cumulative cancer and noncancer risks for this scenario are shown in Table 4-14. None of these risk estimates exceed the USEPA limits. Therefore, the potential for current exposure of trespassers to stream bank soil, sediment, or surface water along these stream segments is insignificant.

4.2.3 Construction Workers

4.2.3.1 Soil

The significance of potential exposures of construction workers to off-site surface and subsurface soil (0 to 10 ft bgs) during excavations was evaluated in the same way that is discussed in Section 4.1.2.1. As shown in Table 4-15, the upper-bound estimates of cumulative cancer and noncancer risks do not exceed the USEPA limits.

The highest site-related lead concentration in subsurface soil at Parcel 398 is higher than the residential screening criterion (Table 2-1d), and is within the range of soil lead industrial screening criterion (750 to 1,500 mg/kg). As discussed above, the soil lead criterion is derived using blood lead modeling and should be compared to the mean concentration in the area where potential exposure is being evaluated. As shown in Appendix B, the mean concentration of lead

in the depth-average soil from the 0 to 10 ft depth interval at Parcel 398 is below the USEPA range of screening criterion for worker exposure to soil lead.

Therefore, the potential for current exposure of construction workers to off-site soil is insignificant.

4.2.3.2 Spring Water

The significance of potential exposures of construction workers to off-site spring water during construction activities was evaluated in the same way that is discussed in Section 4.1.2.3. As shown in Table 4-16, the upper-bound estimates of cumulative cancer and noncancer risks do not exceed the USEPA limits. Therefore, the potential for current exposure of construction workers to off-site spring water is insignificant.

5.0 SUMMARY AND CONCLUSION

Under Question 2 of the CA725 determination, several areas at and around the Facility were identified to have environmental media with constituent concentrations that are higher than conservative risk-based screening criteria. These areas were identified based on a comparison of the highest constituent concentrations in each medium for each area investigated during the RFI. Media with constituent concentrations higher than screening criteria include soil, groundwater, sediment, surface water, spring water, and water from a few inactive residential wells. The predominant contaminant in these media is PCBs.

As discussed under Question 3 of the CA725 determination, current human exposure to the media identified in Question 2 is possible under some circumstances. At the Facility, incidental exposure of routine workers to surface soil in unpaved areas is possible. Construction and maintenance activities at the Facility, however, are covered by the Facility's health and safety procedures, which ensure that no significant exposure to soil, groundwater, and spring water occurs during these activities. Trespasser access to most of the Facility is controlled by fencing and security personnel. However, trespassers could be exposed to surface water at Parcel 201(GM) and surface soil at the Plant Boundary (near the baseball field) because these locations are either not within the Facility's fencing or accessible to the public.

At areas away from the Facility, constituents with concentrations higher than screening criteria are present in media along Bailey's Branch, Pleasant Run, and the northern and western tributaries at locations where removal action has not yet been completed. Media with constituent concentrations higher than screening criteria are present at parts of occupied residential properties, but exposure of residents is not reasonably expected because the residents have been advised to avoid these areas. At unoccupied properties, exposure of trespassers to surface soil and spring water is possible. Trespassers also could be exposed to sediment, surface water, and stream bank soil in stream segments that are accessible from the public locations identified on Figure 3 if they ignore or overlook the warning signs that have been posted. Exposure of construction workers to soil and spring water at off-site areas is also possible.

To assess the significance of potential exposures to media with concentrations higher than screening criteria under current conditions, conservative estimates of cumulative cancer and

noncancer risks were calculated and compared with USEPA-established levels for determining whether they are significant enough to warrant corrective measures under RCRA corrective action (USEPA 1991b). As discussed under Question 4 of the CA725 determination, some risk estimates in this evaluation were derived using estimates of exposure that are more conservative than the reasonable maximum exposure that USEPA recommends for identifying significant risks, and therefore, overstate (sometimes significantly) the risks associated with current exposures. However, these estimates were used to identify areas where corrective measures should be considered, even though such areas may not warrant interim measures now to address current exposures.

As discussed in Section 4, these conservative risk estimates identified several locations at the Facility where the need for corrective measures warrants further evaluation. These locations have been fenced and/or gated to restrict worker access, and GM has put procedures in place to ensure that proper authorization is obtained for any work at these locations. Aside from these locations, no area at or around the Facility has estimates of site-related cumulative cancer and noncancer risks that exceed the USEPA-established limits. Therefore, the results of this evaluation show that current conditions at and around the Facility support a determination that all current human exposures are under control.

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T A B L E S

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria	
A001	VOC	Benzene	71-43-2	A	8	1	7.70E-04	7.70E-04		1.30E+01	C	5.9E-05
A001	VOC	2-Butanone	78-93-3	ID	8	2	3.60E-03	3.70E-03		2.70E+04	NC	1.4E-07
A001	VOC	Carbon Disulfide	75-15-0		8	2	1.70E-03	3.20E-03		1.20E+03	NC	2.7E-06
A001	VOC	Chloroform	67-66-3	B2	8	1	5.15E-03	5.15E-03		1.20E+01	NC	4.3E-04
A001	VOC	1,4-Dichlorobenzene	106-46-7	C	8	1	8.78E-04	8.78E-04		7.90E+01	C	1.1E-05
A001	VOC	Methyl Acetate	79-20-9		8	1	1.95E-03	1.95E-03		9.20E+04	NC	2.1E-08
A001	VOC	Methylcyclohexane	108-87-2		8	1	1.60E-03	1.60E-03		8.70E+03	NC	1.8E-07
A001	VOC	Methylene Chloride	75-09-2	B2	8	1	1.50E-03	1.50E-03		2.10E+02	C	7.1E-06
A001	VOC	Toluene	108-88-3	D	8	1	1.51E-03	1.51E-03		2.20E+03	NC	6.9E-07
A001	SVOC	Anthracene	120-12-7	D	8	1	1.61E-01	1.61E-01		2.40E+05	NC	6.7E-07
A001	SVOC	Benzo(a)anthracene	56-55-3	B2	8	3	5.30E-02	9.45E-01		2.10E+01	C	4.5E-02
A001	SVOC	Benzo(a)pyrene	50-32-8	B2	8	3	1.10E-01	1.00E+00		2.10E+00	C	4.8E-01
A001	SVOC	Benzo(b)fluoranthene	205-99-2	B2	8	5	5.30E-02	1.20E+00		2.10E+01	C	5.7E-02
A001	SVOC	Benzo(g,h,i)perylene	191-24-2	D	8	3	5.10E-02	7.30E-01		2.90E+04	NC	2.5E-05
A001	SVOC	Benzo(k)fluoranthene	207-08-9	B2	8	3	6.40E-02	5.50E-01		2.10E+02	C	2.6E-03
A001	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	2	4.40E-02	9.03E-02		1.20E+03	C	7.5E-05
A001	SVOC	Butylbenzylphthalate	85-68-7	C	8	1	6.43E-02	6.43E-02		1.20E+05	NC	5.4E-07
A001	SVOC	Carbazole	86-74-8	B2	8	1	1.27E-01	1.27E-01		8.60E+02	C	1.5E-04
A001	SVOC	Chrysene	218-01-9	B2	8	5	4.20E-02	1.18E+00		2.10E+03	C	5.6E-04
A001	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	8	1	1.39E-01	1.39E-01		2.10E+00	C	6.6E-02
A001	SVOC	Fluoranthene	206-44-0	D	8	5	3.80E-02	1.91E+00		2.20E+04	NC	8.7E-05
A001	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	8	3	4.90E-02	6.30E-01		2.10E+01	C	3.0E-02
A001	SVOC	2-Methylnaphthalene	91-57-6	ID	8	2	1.15E-01	1.35E-01		1.90E+02	NC	7.1E-04
A001	SVOC	Naphthalene	91-20-3	C	8	1	5.95E-02	5.95E-02		1.90E+02	NC	3.1E-04
A001	SVOC	Phenanthrene	85-01-8	D	8	5	6.70E-02	1.37E+00		2.90E+04	NC	4.7E-05
A001	SVOC	Pyrene	129-00-0	D	8	6	4.00E-02	2.42E+00		2.90E+04	NC	8.3E-05
A001	P/PCB	PCBs (total)	1336-36-3	B2	8	2	8.48E-02	1.95E-01		7.40E+00	C	2.6E-02
A001	INORG	Aluminum	7429-90-5	D	8	8	1.32E+03	1.53E+04	1.48E+04	9.20E+05	NC	5.4E-04
A001	INORG	Antimony	7440-36-0		8	3	5.35E-01	8.00E+00	4.40E-01	4.10E+02	NC	1.8E-02
A001	INORG	Arsenic	7440-38-2	A	8	8	2.20E+00	2.16E+01	1.13E+01	1.60E+01	C	6.4E-01
A001	INORG	Barium	7440-39-3	D	8	8	3.16E+01	1.01E+02	8.38E+01	6.70E+04	NC	2.6E-04
A001	INORG	Beryllium	7440-41-7	B1	8	6	3.00E-01	1.75E+00	5.70E-01	1.90E+03	NC	6.2E-04
A001	INORG	Cadmium	7440-43-9	B1	8	7	1.30E-01	1.50E+00	5.52E-01	4.50E+02	NC	2.1E-03
A001	INORG	Chromium (total)	7440-47-3		8	8	4.80E+00	3.59E+01	2.82E+01	2.50E+03	NC	3.1E-03
A001	INORG	Cobalt	7440-48-4	B1	8	8	1.60E+00	1.10E+01	1.00E+01	1.30E+04	NC	7.3E-05
A001	INORG	Copper	7440-50-8	D	8	8	9.60E+00	2.45E+02	1.89E+01	4.10E+04	NC	5.5E-03
A001	INORG	Cyanide (amenable)	57-12-5A		8	1	8.00E+00	8.00E+00		1.20E+04	NC	6.7E-04

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A001	INORG	Cyanide (total)	57-12-5	D	8	3	1.20E-01	8.65E+00		1.20E+04 NC	7.2E-04
A001	INORG	Iron	7439-89-6	D	8	8	5.59E+03	4.15E+04	2.44E+04	3.10E+05 NC	5.5E-02
A001	INORG	Lead	7439-92-1	B2	8	8	6.70E+00	3.31E+02	2.00E+01	7.50E+02 NC	4.1E-01
A001	INORG	Manganese	7439-96-5	D	8	8	6.72E+01	7.40E+02	6.76E+02	1.90E+04 NC	3.3E-03
A001	INORG	Mercury	7439-97-6	D	8	6	4.40E-02	1.42E-01	7.05E-02	1.36E+01 NC	5.2E-03
A001	INORG	Nickel	7440-02-0	A	8	8	6.60E+00	3.39E+01	1.83E+01	2.00E+04 NC	7.8E-04
A001	INORG	Selenium	7782-49-2	D	8	2	9.00E-01	3.70E+00	3.96E-01	5.10E+03 NC	6.5E-04
A001	INORG	Silver	7440-22-4	D	8	1	1.30E-01	1.30E-01		5.10E+03 NC	2.5E-05
A001	INORG	Thallium	7440-28-0		8	1	5.10E-01	5.10E-01	8.40E-01	6.80E+01 NC	
A001	INORG	Vanadium	7440-62-2		8	8	3.80E+00	3.79E+01	4.18E+01	7.20E+03 NC	
A001	INORG	Zinc	7440-66-6	D	8	8	2.60E+01	2.89E+02	5.48E+01	3.10E+05 NC	7.6E-04
A002	VOC	Acetone	67-64-1	ID	4	2	5.50E-02	2.30E-01		6.00E+03 NC	3.8E-05
A002	VOC	2-Butanone	78-93-3	ID	4	3	7.70E-03	2.70E-02		2.70E+04 NC	1.0E-06
A002	VOC	Carbon Disulfide	75-15-0		4	1	9.80E-03	9.80E-03		1.20E+03 NC	8.2E-06
A002	VOC	Chloroethane	75-00-3		4	1	1.20E-02	1.20E-02		6.50E+01 C	1.8E-04
A002	VOC	1,1-Dichloroethane	75-34-3	C	4	1	2.10E-01	2.10E-01		1.70E+03 NC	1.2E-04
A002	VOC	Methylene Chloride	75-09-2	B2	4	2	4.30E-03	6.50E-03		2.10E+02 C	3.1E-05
A002	VOC	Toluene	108-88-3	D	4	1	2.20E-03	2.20E-03		2.20E+03 NC	1.0E-06
A002	VOC	1,1,1-Trichloroethane	71-55-6	D	4	1	7.70E-03	7.70E-03		6.90E+03 NC	1.1E-06
A002	VOC	Xylenes (total)	1330-20-7	ID	4	1	9.00E-03	9.00E-03		9.00E+02 NC	1.0E-05
A002	SVOC	Phenol	108-95-2	ID	4	1	9.10E-02	9.10E-02		3.70E+05 NC	2.5E-07
A002	P/PCB	PCBs (total)	1336-36-3	B2	4	1	2.85E+00	2.85E+00		7.40E+00 C	3.8E-01
A002	INORG	Aluminum	7429-90-5	D	4	4	4.61E+02	8.34E+04	1.48E+04	9.20E+05 NC	7.5E-02
A002	INORG	Antimony	7440-36-0		4	1	4.50E+00	4.50E+00	4.40E-01	4.10E+02 NC	9.9E-03
A002	INORG	Arsenic	7440-38-2	A	4	4	7.60E-01	2.10E+00	1.13E+01	1.60E+01 C	
A002	INORG	Barium	7440-39-3	D	4	4	1.60E+00	5.15E+01	8.38E+01	6.70E+04 NC	
A002	INORG	Cadmium	7440-43-9	B1	4	3	5.00E-02	1.60E+00	5.52E-01	4.50E+02 NC	2.3E-03
A002	INORG	Chromium (total)	7440-47-3		4	4	4.00E+00	3.91E+01	2.82E+01	2.50E+03 NC	4.4E-03
A002	INORG	Cobalt	7440-48-4	B1	4	4	1.60E+00	1.98E+01	1.00E+01	1.30E+04 NC	7.5E-04
A002	INORG	Copper	7440-50-8	D	4	4	1.88E+01	6.36E+03	1.89E+01	4.10E+04 NC	1.5E-01
A002	INORG	Iron	7439-89-6	D	4	4	1.88E+03	3.97E+03	2.44E+04	3.10E+05 NC	
A002	INORG	Lead	7439-92-1	B2	4	4	5.30E+00	4.97E+01	2.00E+01	7.50E+02 NC	4.0E-02
A002	INORG	Manganese	7439-96-5	D	4	4	9.10E+00	3.84E+02	6.76E+02	1.90E+04 NC	
A002	INORG	Mercury	7439-97-6	D	4	2	3.80E-02	3.00E-01	7.05E-02	1.36E+01 NC	1.7E-02
A002	INORG	Nickel	7440-02-0	A	4	4	7.90E+00	9.10E+01	1.83E+01	2.00E+04 NC	3.6E-03
A002	INORG	Selenium	7782-49-2	D	4	1	4.00E-01	4.00E-01	3.96E-01	5.10E+03 NC	8.5E-07
A002	INORG	Silver	7440-22-4	D	4	1	7.40E-01	7.40E-01		5.10E+03 NC	1.5E-04

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	NC	Ratio of Max Detect to Industrial Screening Criteria
A002	INORG	Thallium	7440-28-0		4	1	7.70E-01	7.70E-01	8.40E-01	6.80E+01	NC	
A002	INORG	Vanadium	7440-62-2		4	4	5.50E-01	1.37E+01	4.18E+01	7.20E+03	NC	
A002	INORG	Zinc	7440-66-6	D	4	4	6.80E+00	3.39E+02	5.48E+01	3.10E+05	NC	9.2E-04
A004	VOC	Acetone	67-64-1	ID	9	1	5.60E-02	5.60E-02		6.00E+03	NC	9.3E-06
A004	VOC	Methyl Acetate	79-20-9		9	2	4.40E-03	5.60E-03		9.20E+04	NC	6.1E-08
A004	VOC	Methylene Chloride	75-09-2	B2	9	1	4.40E-03	4.40E-03		2.10E+02	C	2.1E-05
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	9	3	7.68E-02	1.50E-01		1.20E+03	C	1.3E-04
A004	SVOC	Di-n-butylphthalate	84-74-2	D	9	2	4.00E-01	5.30E-01		6.20E+04	NC	8.5E-06
A004	SVOC	Fluoranthene	206-44-0	D	9	1	5.90E-02	5.90E-02		2.20E+04	NC	2.7E-06
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	9	1	2.80E-01	2.80E-01		1.90E+02	NC	1.5E-03
A004	SVOC	Phenanthrene	85-01-8	D	9	1	8.90E-02	8.90E-02		2.90E+04	NC	3.1E-06
A004	SVOC	Phenol	108-95-2	ID	9	2	2.20E-01	1.50E+00		3.70E+05	NC	4.1E-06
A004	SVOC	Pyrene	129-00-0	D	9	1	8.70E-02	8.70E-02		2.90E+04	NC	3.0E-06
A004	P/PCB	PCBs (total)	1336-36-3	B2	12	9	3.64E-02	4.13E+02		7.40E+00	C	5.6E+01
A004	INORG	Aluminum	7429-90-5	D	9	9	1.13E+04	3.18E+04	1.48E+04	9.20E+05	NC	1.8E-02
A004	INORG	Arsenic	7440-38-2	A	9	9	1.90E+00	1.07E+01	1.13E+01	1.60E+01	C	
A004	INORG	Barium	7440-39-3	D	9	9	1.54E+01	1.12E+02	8.38E+01	6.70E+04	NC	4.1E-04
A004	INORG	Beryllium	7440-41-7	B1	9	5	3.85E-01	1.40E+00	5.70E-01	1.90E+03	NC	4.4E-04
A004	INORG	Cadmium	7440-43-9	B1	9	1	7.00E-01	7.00E-01	5.52E-01	4.50E+02	NC	3.3E-04
A004	INORG	Chromium (total)	7440-47-3		9	9	1.92E+01	3.91E+01	2.82E+01	2.50E+03	NC	4.4E-03
A004	INORG	Cobalt	7440-48-4	B1	9	9	4.30E+00	3.19E+01	1.00E+01	1.30E+04	NC	1.7E-03
A004	INORG	Copper	7440-50-8	D	9	9	1.25E+01	9.36E+02	1.89E+01	4.10E+04	NC	2.2E-02
A004	INORG	Iron	7439-89-6	D	9	9	7.16E+03	3.41E+04	2.44E+04	3.10E+05	NC	3.1E-02
A004	INORG	Lead	7439-92-1	B2	9	9	1.19E+01	3.89E+01	2.00E+01	7.50E+02	NC	2.5E-02
A004	INORG	Manganese	7439-96-5	D	9	9	1.09E+02	5.44E+02	6.76E+02	1.90E+04	NC	
A004	INORG	Mercury	7439-97-6	D	9	8	2.50E-02	6.00E-01	7.05E-02	1.36E+01	NC	3.9E-02
A004	INORG	Nickel	7440-02-0	A	9	9	1.29E+01	8.68E+01	1.83E+01	2.00E+04	NC	3.4E-03
A004	INORG	Selenium	7782-49-2	D	9	1	8.10E-01	8.10E-01	3.96E-01	5.10E+03	NC	8.1E-05
A004	INORG	Silver	7440-22-4	D	9	1	2.00E-01	2.00E-01		5.10E+03	NC	3.9E-05
A004	INORG	Thallium	7440-28-0		9	4	5.60E-01	1.00E+00	8.40E-01	6.80E+01	NC	2.3E-03
A004	INORG	Vanadium	7440-62-2		9	9	2.27E+01	5.33E+01	4.18E+01	7.20E+03	NC	1.6E-03
A004	INORG	Zinc	7440-66-6	D	9	9	3.60E+01	1.44E+02	5.48E+01	3.10E+05	NC	2.9E-04
A004a	VOC	Acetone	67-64-1	ID	3	2	6.50E-03	1.50E-02		6.00E+03	NC	2.5E-06
A004a	VOC	Chlorobenzene	108-90-7	D	3	2	3.90E-04	4.50E-04		5.30E+02	NC	8.5E-07
A004a	SVOC	Benzaldehyde	100-52-7		3	1	8.00E-02	8.00E-02		6.20E+04	NC	1.3E-06
A004a	SVOC	Benzo(a)pyrene	50-32-8	B2	3	1	2.40E-02	2.40E-02		2.10E+00	C	1.1E-02
A004a	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	3.80E-02	3.80E-02		2.10E+01	C	1.8E-03

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Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A004a	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	1.20E-01	1.20E-01		1.20E+03	C 1.0E-04
A004a	SVOC	Fluoranthene	206-44-0	D	3	2	2.10E-02	3.30E-02		2.20E+04	NC 1.5E-06
A004a	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	3.20E-02	3.20E-02		2.10E+01	C 1.5E-03
A004a	SVOC	Phenanthrene	85-01-8	D	3	1	1.80E-02	1.80E-02		2.90E+04	NC 6.2E-07
A004a	SVOC	Pyrene	129-00-0	D	3	2	1.80E-02	2.50E-02		2.90E+04	NC 8.6E-07
A004a	P/PCB	PCBs (total)	1336-36-3	B2	226	212	1.77E-02	3.13E+02		7.40E+00	C 4.2E+01
A004a	INORG	Aluminum	7429-90-5	D	3	3	1.04E+04	1.89E+04	1.48E+04	9.20E+05	NC 4.5E-03
A004a	INORG	Antimony	7440-36-0		3	1	3.90E-01	3.90E-01	4.40E-01	4.10E+02	NC
A004a	INORG	Arsenic	7440-38-2	A	3	3	7.00E+00	1.01E+01	1.13E+01	1.60E+01	C
A004a	INORG	Barium	7440-39-3	D	3	3	7.18E+01	8.55E+01	8.38E+01	6.70E+04	NC 2.5E-05
A004a	INORG	Beryllium	7440-41-7	B1	3	2	2.10E-01	8.80E-01	5.70E-01	1.90E+03	NC 1.6E-04
A004a	INORG	Cadmium	7440-43-9	B1	3	2	3.70E-02	1.30E-01	5.52E-01	4.50E+02	NC
A004a	INORG	Chromium (total)	7440-47-3		3	3	1.74E+01	2.53E+01	2.82E+01	2.50E+03	NC
A004a	INORG	Cobalt	7440-48-4	B1	3	3	1.12E+01	1.46E+01	1.00E+01	1.30E+04	NC 3.5E-04
A004a	INORG	Copper	7440-50-8	D	3	3	1.12E+01	3.13E+02	1.89E+01	4.10E+04	NC 7.2E-03
A004a	INORG	Cyanide (total)	57-12-5	D	3	1	1.80E-01	1.80E-01		1.20E+04	NC 1.5E-05
A004a	INORG	Iron	7439-89-6	D	3	3	1.44E+04	1.98E+04	2.44E+04	3.10E+05	NC
A004a	INORG	Lead	7439-92-1	B2	3	3	1.50E+01	4.39E+01	2.00E+01	7.50E+02	NC 3.2E-02
A004a	INORG	Manganese	7439-96-5	D	3	3	7.07E+02	1.28E+03	6.76E+02	1.90E+04	NC 3.2E-02
A004a	INORG	Mercury	7439-97-6	D	3	3	6.30E-02	1.50E-01	7.05E-02	1.36E+01	NC 5.8E-03
A004a	INORG	Nickel	7440-02-0	A	3	3	1.30E+01	4.43E+01	1.83E+01	2.00E+04	NC 1.3E-03
A004a	INORG	Selenium	7782-49-2	D	3	2	7.40E-01	7.60E-01	3.96E-01	5.10E+03	NC 7.1E-05
A004a	INORG	Thallium	7440-28-0		3	1	1.30E+00	1.30E+00	8.40E-01	6.80E+01	NC 6.8E-03
A004a	INORG	Vanadium	7440-62-2		3	3	2.42E+01	3.46E+01	4.18E+01	7.20E+03	NC
A004a	INORG	Zinc	7440-66-6	D	3	3	4.12E+01	1.48E+02	5.48E+01	3.10E+05	NC 3.0E-04
A005	VOC	Acetone	67-64-1	ID	12	2	5.80E-03	3.60E-02		6.00E+03	NC 6.0E-06
A005	VOC	Benzene	71-43-2	A	12	1	1.30E-03	1.30E-03		1.30E+01	C 1.0E-04
A005	VOC	2-Butanone	78-93-3	ID	12	2	3.60E-03	1.30E-02		2.70E+04	NC 4.8E-07
A005	VOC	Carbon Disulfide	75-15-0		12	1	1.50E-03	1.50E-03		1.20E+03	NC 1.3E-06
A005	VOC	Chlorobenzene	108-90-7	D	12	1	7.80E-04	7.80E-04		5.30E+02	NC 1.5E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	12	1	1.20E-03	1.20E-03		4.10E+03	NC 2.9E-07
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	12	1	7.10E-03	7.10E-03		6.30E+01	NC 1.1E-04
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	12	2	6.60E-04	2.80E-03		7.90E+01	C 3.5E-05
A005	VOC	Ethyl Benzene	100-41-4	D	12	1	6.40E-04	6.40E-04		7.40E+03	NC 8.6E-08
A005	VOC	Methyl Acetate	79-20-9		12	1	1.70E-03	1.70E-03		9.20E+04	NC 1.8E-08
A005	VOC	Methylene Chloride	75-09-2	B2	12	2	1.70E-02	1.85E-02		2.10E+02	C 8.8E-05
A005	VOC	Tetrachloroethene	127-18-4	C-B2	12	1	1.20E-02	1.20E-02		3.40E+01	C 3.5E-04

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A005	VOC	Toluene	108-88-3	D	12	1	1.60E-03	1.60E-03		2.20E+03 NC	7.3E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	12	1	1.70E-02	1.70E-02		5.60E+03 NC	3.0E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	12	1	2.10E-03	2.10E-03		9.00E+02 NC	2.3E-06
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	2	5.28E-02	6.60E-02		2.10E+01 C	3.1E-03
A005	SVOC	Chrysene	218-01-9	B2	12	1	4.98E-02	4.98E-02		2.10E+03 C	2.4E-05
A005	SVOC	Di-n-octylphthalate	117-84-0		12	1	5.65E-02	5.65E-02		2.50E+04 NC	2.3E-06
A005	SVOC	Fluoranthene	206-44-0	D	12	1	7.65E-02	7.65E-02		2.20E+04 NC	3.5E-06
A005	SVOC	Pyrene	129-00-0	D	12	1	6.50E-02	6.50E-02		2.90E+04 NC	2.2E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	21	19	6.11E-02	2.50E+03		7.40E+00 C	3.4E+02
A005	INORG	Aluminum	7429-90-5	D	12	12	1.57E+03	1.64E+04	1.48E+04	9.20E+05 NC	1.7E-03
A005	INORG	Antimony	7440-36-0		12	2	6.50E-01	7.90E-01	4.40E-01	4.10E+02 NC	8.5E-04
A005	INORG	Arsenic	7440-38-2	A	12	12	1.30E+00	9.40E+00	1.13E+01	1.60E+01 C	
A005	INORG	Barium	7440-39-3	D	12	12	9.20E+00	1.30E+02	8.38E+01	6.70E+04 NC	6.9E-04
A005	INORG	Beryllium	7440-41-7	B1	12	8	2.10E-01	1.10E+00	5.70E-01	1.90E+03 NC	2.8E-04
A005	INORG	Cadmium	7440-43-9	B1	12	6	1.13E-01	5.80E-01	5.52E-01	4.50E+02 NC	6.2E-05
A005	INORG	Chromium (total)	7440-47-3		12	12	6.30E+00	4.49E+01	2.82E+01	2.50E+03 NC	6.7E-03
A005	INORG	Cobalt	7440-48-4	B1	12	12	1.10E+00	2.65E+01	1.00E+01	1.30E+04 NC	1.3E-03
A005	INORG	Copper	7440-50-8	D	12	12	1.05E+01	9.86E+01	1.89E+01	4.10E+04 NC	1.9E-03
A005	INORG	Cyanide (total)	57-12-5	D	12	1	2.50E-01	2.50E-01		1.20E+04 NC	2.1E-05
A005	INORG	Iron	7439-89-6	D	12	12	3.03E+03	3.11E+04	2.44E+04	3.10E+05 NC	2.2E-02
A005	INORG	Lead	7439-92-1	B2	12	12	5.80E+00	5.65E+01	2.00E+01	7.50E+02 NC	4.9E-02
A005	INORG	Manganese	7439-96-5	D	12	12	3.99E+01	1.64E+03	6.76E+02	1.90E+04 NC	5.1E-02
A005	INORG	Mercury	7439-97-6	D	12	11	3.00E-02	1.70E-01	7.05E-02	1.36E+01 NC	7.3E-03
A005	INORG	Nickel	7440-02-0	A	12	12	8.70E+00	2.85E+01	1.83E+01	2.00E+04 NC	5.1E-04
A005	INORG	Selenium	7782-49-2	D	12	1	8.10E-01	8.10E-01	3.96E-01	5.10E+03 NC	8.1E-05
A005	INORG	Silver	7440-22-4	D	12	1	1.70E-01	1.70E-01		5.10E+03 NC	3.3E-05
A005	INORG	Thallium	7440-28-0		12	3	4.60E-01	6.60E-01	8.40E-01	6.80E+01 NC	
A005	INORG	Vanadium	7440-62-2		12	12	3.10E+00	7.75E+01	4.18E+01	7.20E+03 NC	5.0E-03
A005	INORG	Zinc	7440-66-6	D	12	12	2.72E+01	1.06E+02	5.48E+01	3.10E+05 NC	1.7E-04
A006	VOC	Acetone	67-64-1	ID	17	1	9.70E-03	9.70E-03		6.00E+03 NC	1.6E-06
A006	VOC	Chlorobenzene	108-90-7	D	17	1	4.00E+00	4.00E+00		5.30E+02 NC	7.5E-03
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	17	2	3.50E-02	2.60E+00		4.10E+03 NC	6.3E-04
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	17	2	4.50E-01	1.80E+01		6.30E+01 NC	2.9E-01
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	17	2	4.90E-01	5.70E+01		7.90E+01 C	7.2E-01
A006	VOC	1,2-Dichloroethane	107-06-2	B2	17	1	1.70E-02	1.70E-02		6.00E+00 C	2.8E-03
A006	VOC	Methyl Acetate	79-20-9		17	3	1.30E-03	2.40E-03		9.20E+04 NC	2.6E-08
A006	VOC	Methylene Chloride	75-09-2	B2	17	3	5.90E-03	1.20E-02		2.10E+02 C	5.7E-05

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	17	2	7.30E-03	7.00E-01		5.60E+03 NC	1.3E-04
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	17	2	1.40E+00	2.00E+00		1.20E+03 C	1.7E-03
A006	SVOC	2,4-Dimethylphenol	105-67-9		17	1	1.00E-01	1.00E-01		1.20E+04 NC	8.3E-06
A006	SVOC	Di-n-octylphthalate	117-84-0		17	4	1.80E-01	6.20E+01		2.50E+04 NC	2.5E-03
A006	P/PCB	PCBs (total)	1336-36-3	B2	19	16	5.90E-02	8.06E+03		7.40E+00 C	1.1E+03
A006	INORG	Aluminum	7429-90-5	D	17	17	4.13E+03	1.68E+04	1.48E+04	9.20E+05 NC	2.2E-03
A006	INORG	Antimony	7440-36-0		14	1	9.40E-01	9.40E-01	4.40E-01	4.10E+02 NC	1.2E-03
A006	INORG	Arsenic	7440-38-2	A	17	17	4.70E+00	1.12E+01	1.13E+01	1.60E+01 C	
A006	INORG	Barium	7440-39-3	D	17	17	2.55E+01	1.43E+02	8.38E+01	6.70E+04 NC	8.8E-04
A006	INORG	Beryllium	7440-41-7	B1	17	8	2.90E-01	9.10E-01	5.70E-01	1.90E+03 NC	1.8E-04
A006	INORG	Cadmium	7440-43-9	B1	17	11	1.20E-01	3.30E+00	5.52E-01	4.50E+02 NC	6.1E-03
A006	INORG	Chromium (total)	7440-47-3		17	17	5.80E+00	4.91E+01	2.82E+01	2.50E+03 NC	8.4E-03
A006	INORG	Cobalt	7440-48-4	B1	17	17	3.20E+00	1.88E+01	1.00E+01	1.30E+04 NC	6.7E-04
A006	INORG	Copper	7440-50-8	D	17	17	6.00E+00	2.26E+02	1.89E+01	4.10E+04 NC	5.1E-03
A006	INORG	Iron	7439-89-6	D	17	17	1.19E+04	3.66E+04	2.44E+04	3.10E+05 NC	3.9E-02
A006	INORG	Lead	7439-92-1	B2	17	17	1.18E+01	7.62E+01	2.00E+01	7.50E+02 NC	7.5E-02
A006	INORG	Manganese	7439-96-5	D	17	17	6.75E+01	1.00E+03	6.76E+02	1.90E+04 NC	1.7E-02
A006	INORG	Mercury	7439-97-6	D	17	15	1.90E-02	2.20E-01	7.05E-02	1.36E+01 NC	1.1E-02
A006	INORG	Nickel	7440-02-0	A	17	17	8.00E+00	1.87E+02	1.83E+01	2.00E+04 NC	8.4E-03
A006	INORG	Selenium	7782-49-2	D	17	6	5.00E-01	1.60E+00	3.96E-01	5.10E+03 NC	2.4E-04
A006	INORG	Silver	7440-22-4	D	17	1	5.50E-01	5.50E-01		5.10E+03 NC	1.1E-04
A006	INORG	Thallium	7440-28-0		17	3	7.20E-01	1.30E+00	8.40E-01	6.80E+01 NC	6.8E-03
A006	INORG	Vanadium	7440-62-2		17	17	7.00E+00	6.01E+01	4.18E+01	7.20E+03 NC	2.5E-03
A006	INORG	Zinc	7440-66-6	D	17	17	2.65E+01	1.09E+03	5.48E+01	3.10E+05 NC	3.3E-03
A007	P/PCB	PCBs (total)	1336-36-3	B2	3	1	1.38E-01	1.38E-01		7.40E+00 C	1.9E-02
A007	INORG	Aluminum	7429-90-5	D	3	3	1.11E+04	1.30E+04	1.48E+04	9.20E+05 NC	
A007	INORG	Arsenic	7440-38-2	A	3	3	8.40E+00	1.02E+01	1.13E+01	1.60E+01 C	
A007	INORG	Barium	7440-39-3	D	3	3	4.59E+01	5.81E+01	8.38E+01	6.70E+04 NC	
A007	INORG	Beryllium	7440-41-7	B1	3	1	1.10E+00	1.10E+00	5.70E-01	1.90E+03 NC	2.8E-04
A007	INORG	Chromium (total)	7440-47-3		3	3	2.25E+01	3.62E+01	2.82E+01	2.50E+03 NC	3.2E-03
A007	INORG	Cobalt	7440-48-4	B1	3	3	5.80E+00	1.10E+01	1.00E+01	1.30E+04 NC	7.3E-05
A007	INORG	Copper	7440-50-8	D	3	3	1.30E+01	1.49E+01	1.89E+01	4.10E+04 NC	
A007	INORG	Iron	7439-89-6	D	3	3	2.53E+04	2.74E+04	2.44E+04	3.10E+05 NC	9.8E-03
A007	INORG	Lead	7439-92-1	B2	3	3	1.67E+01	2.01E+01	2.00E+01	7.50E+02 NC	8.4E-05
A007	INORG	Manganese	7439-96-5	D	3	3	1.78E+02	2.04E+02	6.76E+02	1.90E+04 NC	
A007	INORG	Nickel	7440-02-0	A	3	3	1.21E+01	2.03E+01	1.83E+01	2.00E+04 NC	1.0E-04
A007	INORG	Vanadium	7440-62-2		3	3	3.45E+01	3.84E+01	4.18E+01	7.20E+03 NC	

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A007	INORG	Zinc	7440-66-6	D	3	3	3.61E+01	4.27E+01	5.48E+01	3.10E+05 NC	
A008	VOC	Acetone	67-64-1	ID	9	1	1.30E+00	1.30E+00		6.00E+03 NC	2.2E-04
A008	VOC	2-Butanone	78-93-3	ID	9	1	2.80E-01	2.80E-01		2.70E+04 NC	1.0E-05
A008	VOC	Methyl Acetate	79-20-9		9	1	1.40E+01	1.40E+01		9.20E+04 NC	1.5E-04
A008	SVOC	Anthracene	120-12-7	D	9	2	1.80E-02	2.30E-02		2.40E+05 NC	9.6E-08
A008	SVOC	Benzo(a)anthracene	56-55-3	B2	9	2	2.00E-02	4.50E-02		2.10E+01 C	2.1E-03
A008	SVOC	Benzo(a)pyrene	50-32-8	B2	9	3	2.10E-02	6.30E-02		2.10E+00 C	3.0E-02
A008	SVOC	Benzo(b)fluoranthene	205-99-2	B2	9	3	2.50E-02	8.50E-02		2.10E+01 C	4.0E-03
A008	SVOC	Benzo(g,h,i)perylene	191-24-2	D	9	2	1.80E-02	4.40E-02		2.90E+04 NC	1.5E-06
A008	SVOC	Chrysene	218-01-9	B2	9	3	2.50E-02	6.20E-02		2.10E+03 C	3.0E-05
A008	SVOC	Fluoranthene	206-44-0	D	9	3	3.30E-02	6.50E-02		2.20E+04 NC	3.0E-06
A008	SVOC	Phenanthrene	85-01-8	D	9	2	1.90E-02	3.50E-02		2.90E+04 NC	1.2E-06
A008	SVOC	Pyrene	129-00-0	D	9	3	3.60E-02	9.20E-02		2.90E+04 NC	3.2E-06
A008	P/PCB	PCBs (total)	1336-36-3	B2	9	7	3.93E-02	2.64E+00		7.40E+00 C	3.6E-01
A008	INORG	Aluminum	7429-90-5	D	9	9	8.67E+03	1.60E+04	1.48E+04	9.20E+05 NC	1.2E-03
A008	INORG	Antimony	7440-36-0		9	3	5.60E-01	1.60E+00	4.40E-01	4.10E+02 NC	2.8E-03
A008	INORG	Arsenic	7440-38-2	A	9	9	5.90E+00	1.05E+01	1.13E+01	1.60E+01 C	
A008	INORG	Barium	7440-39-3	D	9	9	2.86E+01	8.54E+01	8.38E+01	6.70E+04 NC	2.4E-05
A008	INORG	Beryllium	7440-41-7	B1	9	9	2.75E-01	1.00E+00	5.70E-01	1.90E+03 NC	2.3E-04
A008	INORG	Cadmium	7440-43-9	B1	9	6	2.00E-01	7.10E-01	5.52E-01	4.50E+02 NC	3.5E-04
A008	INORG	Chromium (total)	7440-47-3		9	9	1.57E+01	3.77E+01	2.82E+01	2.50E+03 NC	3.8E-03
A008	INORG	Cobalt	7440-48-4	B1	9	9	3.10E+00	1.06E+01	1.00E+01	1.30E+04 NC	4.3E-05
A008	INORG	Copper	7440-50-8	D	9	9	8.80E+00	2.19E+01	1.89E+01	4.10E+04 NC	7.3E-05
A008	INORG	Iron	7439-89-6	D	9	9	1.86E+04	3.28E+04	2.44E+04	3.10E+05 NC	2.7E-02
A008	INORG	Lead	7439-92-1	B2	9	9	1.34E+01	3.75E+01	2.00E+01	7.50E+02 NC	2.3E-02
A008	INORG	Manganese	7439-96-5	D	9	9	5.79E+01	7.42E+02	6.76E+02	1.90E+04 NC	3.5E-03
A008	INORG	Mercury	7439-97-6	D	9	7	2.50E-02	2.40E-01	7.05E-02	1.36E+01 NC	1.2E-02
A008	INORG	Nickel	7440-02-0	A	9	9	7.90E+00	2.74E+01	1.83E+01	2.00E+04 NC	4.5E-04
A008	INORG	Selenium	7782-49-2	D	9	5	7.30E-01	1.30E+00	3.96E-01	5.10E+03 NC	1.8E-04
A008	INORG	Vanadium	7440-62-2		9	9	2.19E+01	4.90E+01	4.18E+01	7.20E+03 NC	1.0E-03
A008	INORG	Zinc	7440-66-6	D	9	9	2.73E+01	8.01E+01	5.48E+01	3.10E+05 NC	8.2E-05
A009	VOC	Acetone	67-64-1	ID	3	1	3.80E-03	3.80E-03		6.00E+03 NC	6.3E-07
A009	SVOC	Anthracene	120-12-7	D	3	1	1.10E-01	1.10E-01		2.40E+05 NC	4.6E-07
A009	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	8.60E-02	3.30E-01		2.10E+01 C	1.6E-02
A009	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	8.80E-02	3.10E-01		2.10E+00 C	1.5E-01
A009	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	1.10E-01	4.50E-01		2.10E+01 C	2.1E-02
A009	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	7.50E-02	1.70E-01		2.90E+04 NC	5.9E-06

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria	
A009	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	1	1.50E-01	1.50E-01		2.10E+02	C	7.1E-04
A009	SVOC	Carbazole	86-74-8	B2	3	1	6.30E-02	6.30E-02		8.60E+02	C	7.3E-05
A009	SVOC	Chrysene	218-01-9	B2	3	2	8.10E-02	3.80E-01		2.10E+03	C	1.8E-04
A009	SVOC	Dibenzofuran	132-64-9	D	3	1	7.30E-02	7.30E-02		3.10E+03	NC	2.4E-05
A009	SVOC	Fluoranthene	206-44-0	D	3	2	2.20E-01	7.60E-01		2.20E+04	NC	3.5E-05
A009	SVOC	Fluorene	86-73-7	D	3	1	1.90E-01	1.90E-01		2.60E+04	NC	7.3E-06
A009	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	1.70E-01	1.70E-01		2.10E+01	C	8.1E-03
A009	SVOC	Phenanthrene	85-01-8	D	3	2	1.50E-01	6.60E-01		2.90E+04	NC	2.3E-05
A009	SVOC	Pyrene	129-00-0	D	3	2	1.80E-01	6.40E-01		2.90E+04	NC	2.2E-05
A009	P/PCB	PCBs (total)	1336-36-3	B2	3	3	5.08E-02	1.52E+00		7.40E+00	C	2.1E-01
A009	INORG	Aluminum	7429-90-5	D	3	3	1.37E+03	1.88E+03	1.48E+04	9.20E+05	NC	
A009	INORG	Arsenic	7440-38-2	A	3	3	5.60E-01	1.40E+00	1.13E+01	1.60E+01	C	
A009	INORG	Barium	7440-39-3	D	3	3	4.07E+01	7.55E+01	8.38E+01	6.70E+04	NC	
A009	INORG	Cadmium	7440-43-9	B1	3	3	2.80E-01	3.70E-01	5.52E-01	4.50E+02	NC	
A009	INORG	Chromium (total)	7440-47-3		3	3	4.50E+00	4.90E+00	2.82E+01	2.50E+03	NC	
A009	INORG	Cobalt	7440-48-4	B1	3	3	7.40E-01	1.90E+00	1.00E+01	1.30E+04	NC	
A009	INORG	Copper	7440-50-8	D	3	3	4.50E+00	7.20E+00	1.89E+01	4.10E+04	NC	
A009	INORG	Cyanide (total)	57-12-5	D	3	1	2.00E-01	2.00E-01		1.20E+04	NC	1.7E-05
A009	INORG	Iron	7439-89-6	D	3	3	2.49E+03	4.07E+03	2.44E+04	3.10E+05	NC	
A009	INORG	Lead	7439-92-1	B2	3	3	2.70E+00	2.90E+00	2.00E+01	7.50E+02	NC	
A009	INORG	Manganese	7439-96-5	D	3	3	7.50E+01	1.06E+02	6.76E+02	1.90E+04	NC	
A009	INORG	Mercury	7439-97-6	D	3	2	9.70E-03	1.10E-02	7.05E-02	1.36E+01	NC	
A009	INORG	Nickel	7440-02-0	A	3	3	4.70E+00	5.40E+00	1.83E+01	2.00E+04	NC	
A009	INORG	Thallium	7440-28-0		3	1	1.00E+00	1.00E+00	8.40E-01	6.80E+01	NC	2.3E-03
A009	INORG	Vanadium	7440-62-2		3	3	2.70E+00	4.70E+00	4.18E+01	7.20E+03	NC	
A009	INORG	Zinc	7440-66-6	D	3	3	2.55E+01	3.55E+01	5.48E+01	3.10E+05	NC	
A011	VOC	2-Butanone	78-93-3	ID	5	4	2.70E-03	8.60E-03		2.70E+04	NC	3.2E-07
A011	VOC	cis-1,2-Dichloroethene	156-59-2	D	5	1	7.90E-03	7.90E-03		1.50E+02	NC	5.3E-05
A011	VOC	Methyl Acetate	79-20-9		5	1	1.70E-03	1.70E-03		9.20E+04	NC	1.8E-08
A011	VOC	Methylene Chloride	75-09-2	B2	5	1	2.80E-03	2.80E-03		2.10E+02	C	1.3E-05
A011	VOC	Tetrachloroethene	127-18-4	C-B2	5	1	2.10E-02	2.10E-02		3.40E+01	C	6.2E-04
A011	VOC	Toluene	108-88-3	D	5	1	1.60E-03	1.60E-03		2.20E+03	NC	7.3E-07
A011	VOC	Trichloroethene	79-01-6	C-B2	5	1	2.80E-03	2.80E-03		6.12E+01	C	4.6E-05
A011	SVOC	Benzo(a)anthracene	56-55-3	B2	5	2	8.90E-02	9.70E-02		2.10E+01	C	4.6E-03
A011	SVOC	Benzo(a)pyrene	50-32-8	B2	5	1	1.10E-01	1.10E-01		2.10E+00	C	5.2E-02
A011	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	2	9.50E-02	1.60E-01		2.10E+01	C	7.6E-03
A011	SVOC	Benzo(k)fluoranthene	207-08-9	B2	5	1	9.60E-02	9.60E-02		2.10E+02	C	4.6E-04

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	C	Ratio of Max Detect to Industrial Screening Criteria
A011	SVOC	Chrysene	218-01-9	B2	5	1	1.10E-01	1.10E-01		2.10E+03	C	5.2E-05
A011	SVOC	Fluoranthene	206-44-0	D	5	2	1.00E-01	1.90E-01		2.20E+04	NC	8.6E-06
A011	SVOC	Phenanthrene	85-01-8	D	5	2	6.70E-02	1.40E-01		2.90E+04	NC	4.8E-06
A011	SVOC	Pyrene	129-00-0	D	5	1	1.60E-01	1.60E-01		2.90E+04	NC	5.5E-06
A011	P/PCB	PCBs (total)	1336-36-3	B2	5	5	7.00E-02	4.83E+00		7.40E+00	C	6.5E-01
A011	INORG	Aluminum	7429-90-5	D	5	5	5.49E+03	1.15E+04	1.48E+04	9.20E+05	NC	
A011	INORG	Antimony	7440-36-0		5	1	7.00E+00	7.00E+00	4.40E-01	4.10E+02	NC	1.6E-02
A011	INORG	Arsenic	7440-38-2	A	5	5	3.10E+00	8.05E+00	1.13E+01	1.60E+01	C	
A011	INORG	Barium	7440-39-3	D	5	5	4.80E+01	8.86E+01	8.38E+01	6.70E+04	NC	7.2E-05
A011	INORG	Beryllium	7440-41-7	B1	5	5	2.85E-01	4.90E-01	5.70E-01	1.90E+03	NC	
A011	INORG	Cadmium	7440-43-9	B1	5	4	2.30E-01	6.70E-01	5.52E-01	4.50E+02	NC	2.6E-04
A011	INORG	Chromium (total)	7440-47-3		5	5	1.02E+01	2.50E+01	2.82E+01	2.50E+03	NC	
A011	INORG	Cobalt	7440-48-4	B1	5	5	3.60E+00	1.13E+01	1.00E+01	1.30E+04	NC	9.6E-05
A011	INORG	Copper	7440-50-8	D	5	5	1.01E+01	7.04E+01	1.89E+01	4.10E+04	NC	1.3E-03
A011	INORG	Iron	7439-89-6	D	5	5	9.22E+03	2.34E+04	2.44E+04	3.10E+05	NC	
A011	INORG	Lead	7439-92-1	B2	5	5	1.24E+01	5.49E+01	2.00E+01	7.50E+02	NC	4.6E-02
A011	INORG	Manganese	7439-96-5	D	5	5	9.68E+01	1.05E+03	6.76E+02	1.90E+04	NC	2.0E-02
A011	INORG	Mercury	7439-97-6	D	5	3	3.00E-02	1.11E-01	7.05E-02	1.36E+01	NC	2.9E-03
A011	INORG	Nickel	7440-02-0	A	5	5	7.30E+00	1.90E+01	1.83E+01	2.00E+04	NC	3.2E-05
A011	INORG	Selenium	7782-49-2	D	5	3	3.70E-01	5.20E-01	3.96E-01	5.10E+03	NC	2.4E-05
A011	INORG	Thallium	7440-28-0		5	2	7.60E-01	1.00E+00	8.40E-01	6.80E+01	NC	2.3E-03
A011	INORG	Vanadium	7440-62-2		5	5	1.11E+01	3.70E+01	4.18E+01	7.20E+03	NC	
A011	INORG	Zinc	7440-66-6	D	5	5	3.33E+01	2.82E+02	5.48E+01	3.10E+05	NC	7.3E-04
A012	VOC	Acetone	67-64-1	ID	2	1	4.10E-03	4.10E-03		6.00E+03	NC	6.8E-07
A012	VOC	cis-1,2-Dichloroethene	156-59-2	D	2	1	1.70E-03	1.70E-03		1.50E+02	NC	1.1E-05
A012	INORG	Aluminum	7429-90-5	D	2	2	6.51E+03	8.67E+03	1.48E+04	9.20E+05	NC	
A012	INORG	Arsenic	7440-38-2	A	2	2	5.50E+00	1.09E+01	1.13E+01	1.60E+01	C	
A012	INORG	Barium	7440-39-3	D	2	2	2.43E+01	4.82E+01	8.38E+01	6.70E+04	NC	
A012	INORG	Chromium (total)	7440-47-3		2	2	1.93E+01	2.29E+01	2.82E+01	2.50E+03	NC	
A012	INORG	Cobalt	7440-48-4	B1	2	2	1.40E+00	2.50E+00	1.00E+01	1.30E+04	NC	
A012	INORG	Copper	7440-50-8	D	2	2	7.30E+00	2.05E+01	1.89E+01	4.10E+04	NC	3.9E-05
A012	INORG	Iron	7439-89-6	D	2	2	2.07E+04	5.96E+04	2.44E+04	3.10E+05	NC	1.1E-01
A012	INORG	Lead	7439-92-1	B2	2	2	1.14E+01	1.36E+01	2.00E+01	7.50E+02	NC	
A012	INORG	Manganese	7439-96-5	D	2	2	2.64E+01	1.18E+02	6.76E+02	1.90E+04	NC	
A012	INORG	Mercury	7439-97-6	D	2	2	2.00E-02	2.90E-02	7.05E-02	1.36E+01	NC	
A012	INORG	Nickel	7440-02-0	A	2	2	4.00E+00	5.50E+00	1.83E+01	2.00E+04	NC	
A012	INORG	Selenium	7782-49-2	D	2	1	8.90E-01	8.90E-01	3.96E-01	5.10E+03	NC	9.7E-05

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A012	INORG	Vanadium	7440-62-2		2	2	3.72E+01	4.01E+01	4.18E+01	7.20E+03 NC	
A012	INORG	Zinc	7440-66-6	D	2	2	1.52E+01	1.91E+01	5.48E+01	3.10E+05 NC	
A015	VOC	2-Butanone	78-93-3	ID	3	1	3.80E-03	3.80E-03		2.70E+04 NC	1.4E-07
A015	VOC	Ethyl Benzene	100-41-4	D	3	1	6.40E-04	6.40E-04		7.40E+03 NC	8.6E-08
A015	VOC	Methyl Acetate	79-20-9		3	1	1.40E-03	1.40E-03		9.20E+04 NC	1.5E-08
A015	VOC	Methylene Chloride	75-09-2	B2	3	2	8.75E-03	8.80E-03		2.10E+02 C	4.2E-05
A015	VOC	Xylenes (total)	1330-20-7	ID	3	1	5.00E-03	5.00E-03		9.00E+02 NC	5.6E-06
A015	SVOC	Acenaphthene	83-32-9		3	1	5.05E-02	5.05E-02		2.90E+04 NC	1.7E-06
A015	SVOC	Anthracene	120-12-7	D	3	2	5.48E-02	6.38E-02		2.40E+05 NC	2.7E-07
A015	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	2.01E-01	2.06E-01		2.10E+01 C	9.8E-03
A015	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	1.97E-01	2.37E-01		2.10E+00 C	1.1E-01
A015	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	2.41E-01	3.45E-01		2.10E+01 C	1.6E-02
A015	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.26E-01	1.55E-01		2.90E+04 NC	5.3E-06
A015	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	1.10E-01	1.20E-01		2.10E+02 C	5.7E-04
A015	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	4.98E-02	4.98E-02		1.20E+03 C	4.1E-05
A015	SVOC	Carbazole	86-74-8	B2	3	2	4.73E-02	5.08E-02		8.60E+02 C	5.9E-05
A015	SVOC	Chrysene	218-01-9	B2	3	2	2.46E-01	2.59E-01		2.10E+03 C	1.2E-04
A015	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	2	4.53E-02	4.95E-02		2.10E+00 C	2.4E-02
A015	SVOC	Di-n-butylphthalate	84-74-2	D	3	1	3.75E-01	3.75E-01		6.20E+04 NC	6.0E-06
A015	SVOC	Fluoranthene	206-44-0	D	3	2	5.19E-01	5.25E-01		2.20E+04 NC	2.4E-05
A015	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	1.25E-01	1.54E-01		2.10E+01 C	7.3E-03
A015	SVOC	Naphthalene	91-20-3	C	3	1	4.18E-02	4.18E-02		1.90E+02 NC	2.2E-04
A015	SVOC	Phenanthrene	85-01-8	D	3	2	2.35E-01	2.87E-01		2.90E+04 NC	9.9E-06
A015	SVOC	Phenol	108-95-2	ID	3	3	6.33E-02	1.85E-01		3.70E+05 NC	5.0E-07
A015	SVOC	Pyrene	129-00-0	D	3	2	3.19E-01	4.30E-01		2.90E+04 NC	1.5E-05
A015	P/PCB	PCBs (total)	1336-36-3	B2	3	3	6.39E+00	3.76E+01		7.40E+00 C	5.1E+00
A015	INORG	Aluminum	7429-90-5	D	3	3	2.02E+03	6.93E+03	1.48E+04	9.20E+05 NC	
A015	INORG	Arsenic	7440-38-2	A	3	3	7.30E-01	1.70E+00	1.13E+01	1.60E+01 C	
A015	INORG	Barium	7440-39-3	D	3	3	1.47E+01	5.52E+02	8.38E+01	6.70E+04 NC	7.0E-03
A015	INORG	Cadmium	7440-43-9	B1	3	2	6.70E-01	6.95E-01	5.52E-01	4.50E+02 NC	3.2E-04
A015	INORG	Chromium (total)	7440-47-3		3	3	1.13E+01	3.02E+01	2.82E+01	2.50E+03 NC	8.2E-04
A015	INORG	Cobalt	7440-48-4	B1	3	3	6.75E+00	3.14E+01	1.00E+01	1.30E+04 NC	1.6E-03
A015	INORG	Copper	7440-50-8	D	3	3	4.83E+01	1.78E+02	1.89E+01	4.10E+04 NC	3.9E-03
A015	INORG	Iron	7439-89-6	D	3	3	1.38E+03	6.75E+03	2.44E+04	3.10E+05 NC	
A015	INORG	Lead	7439-92-1	B2	3	3	1.06E+01	2.04E+01	2.00E+01	7.50E+02 NC	4.2E-04
A015	INORG	Manganese	7439-96-5	D	3	3	5.36E+01	1.39E+02	6.76E+02	1.90E+04 NC	
A015	INORG	Mercury	7439-97-6	D	3	3	3.20E-01	1.60E+00	7.05E-02	1.36E+01 NC	1.1E-01

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A015	INORG	Nickel	7440-02-0	A	3	3	2.23E+01	4.53E+01	1.83E+01	2.00E+04 NC	1.3E-03
A015	INORG	Silver	7440-22-4	D	3	2	1.70E-01	3.00E-01		5.10E+03 NC	5.9E-05
A015	INORG	Thallium	7440-28-0		3	1	7.48E-01	7.48E-01	8.40E-01	6.80E+01 NC	
A015	INORG	Vanadium	7440-62-2		3	3	2.25E+00	6.60E+00	4.18E+01	7.20E+03 NC	
A015	INORG	Zinc	7440-66-6	D	3	3	1.70E+01	9.62E+01	5.48E+01	3.10E+05 NC	1.3E-04
A017	VOC	Acetone	67-64-1	ID	2	1	9.90E-03	9.90E-03		6.00E+03 NC	1.7E-06
A017	VOC	Trichloroethene	79-01-6	C-B2	2	1	7.80E-04	7.80E-04		6.12E+01 C	1.3E-05
A017	P/PCB	PCBs (total)	1336-36-3	B2	2	2	3.34E-01	3.60E+00		7.40E+00 C	4.9E-01
A017	INORG	Aluminum	7429-90-5	D	2	2	1.32E+03	9.83E+03	1.48E+04	9.20E+05 NC	
A017	INORG	Antimony	7440-36-0		2	1	6.10E-01	6.10E-01	4.40E-01	4.10E+02 NC	4.1E-04
A017	INORG	Arsenic	7440-38-2	A	2	2	1.80E+00	5.80E+00	1.13E+01	1.60E+01 C	
A017	INORG	Barium	7440-39-3	D	2	2	1.35E+01	4.51E+01	8.38E+01	6.70E+04 NC	
A017	INORG	Cadmium	7440-43-9	B1	2	1	2.90E-01	2.90E-01	5.52E-01	4.50E+02 NC	
A017	INORG	Chromium (total)	7440-47-3		2	2	6.10E+00	3.58E+01	2.82E+01	2.50E+03 NC	3.1E-03
A017	INORG	Cobalt	7440-48-4	B1	2	2	1.20E+00	6.90E+00	1.00E+01	1.30E+04 NC	
A017	INORG	Copper	7440-50-8	D	2	2	3.30E+00	4.19E+01	1.89E+01	4.10E+04 NC	5.6E-04
A017	INORG	Iron	7439-89-6	D	2	2	4.01E+03	2.92E+04	2.44E+04	3.10E+05 NC	1.6E-02
A017	INORG	Lead	7439-92-1	B2	2	2	8.20E+00	3.12E+01	2.00E+01	7.50E+02 NC	1.5E-02
A017	INORG	Manganese	7439-96-5	D	2	2	7.04E+01	1.18E+03	6.76E+02	1.90E+04 NC	2.7E-02
A017	INORG	Mercury	7439-97-6	D	2	2	6.00E-02	1.30E-01	7.05E-02	1.36E+01 NC	4.4E-03
A017	INORG	Nickel	7440-02-0	A	2	2	1.80E+00	2.37E+01	1.83E+01	2.00E+04 NC	2.7E-04
A017	INORG	Selenium	7782-49-2	D	2	1	1.30E+00	1.30E+00	3.96E-01	5.10E+03 NC	1.8E-04
A017	INORG	Thallium	7440-28-0		2	1	7.80E-01	7.80E-01	8.40E-01	6.80E+01 NC	
A017	INORG	Vanadium	7440-62-2		2	2	4.50E+00	4.98E+01	4.18E+01	7.20E+03 NC	1.1E-03
A017	INORG	Zinc	7440-66-6	D	2	2	1.41E+01	9.73E+01	5.48E+01	3.10E+05 NC	1.4E-04
A018	VOC	Acetone	67-64-1	ID	5	1	3.40E-01	3.40E-01		6.00E+03 NC	5.7E-05
A018	VOC	Benzene	71-43-2	A	5	1	5.40E-04	5.40E-04		1.30E+01 C	4.2E-05
A018	VOC	cis-1,2-Dichloroethene	156-59-2	D	5	1	6.30E-02	6.30E-02		1.50E+02 NC	4.2E-04
A018	VOC	Methyl Acetate	79-20-9		5	1	2.60E-03	2.60E-03		9.20E+04 NC	2.8E-08
A018	VOC	Methylcyclohexane	108-87-2		5	1	7.20E-04	7.20E-04		8.70E+03 NC	8.3E-08
A018	VOC	Methylene Chloride	75-09-2	B2	5	2	4.00E-03	7.30E-03		2.10E+02 C	3.5E-05
A018	VOC	Tetrachloroethene	127-18-4	C-B2	5	2	6.70E-04	1.10E+00		3.40E+01 C	3.2E-02
A018	VOC	Toluene	108-88-3	D	5	2	8.80E-04	2.60E-02		2.20E+03 NC	1.2E-05
A018	VOC	Trichloroethene	79-01-6	C-B2	5	1	2.10E-01	2.10E-01		6.12E+01 C	3.4E-03
A018	SVOC	Acenaphthylene	208-96-8	D	5	1	7.40E-02	7.40E-02		2.90E+04 NC	2.6E-06
A018	SVOC	Anthracene	120-12-7	D	5	3	6.90E-02	7.30E-02		2.40E+05 NC	3.0E-07
A018	SVOC	Benzo(a)anthracene	56-55-3	B2	5	4	2.10E-02	2.10E-01		2.10E+01 C	1.0E-02

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A018	SVOC	Benzo(a)pyrene	50-32-8	B2	5	4	3.30E-02	2.00E-01		2.10E+00	C 9.5E-02
A018	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	4	3.10E-02	3.20E-01		2.10E+01	C 1.5E-02
A018	SVOC	Benzo(g,h,i)perylene	191-24-2	D	5	4	2.90E-02	1.30E-01		2.90E+04	NC 4.5E-06
A018	SVOC	Benzo(k)fluoranthene	207-08-9	B2	5	3	3.00E-02	2.10E-01		2.10E+02	C 1.0E-03
A018	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01	1.20E-01		1.20E+03	C 1.0E-04
A018	SVOC	Butylbenzylphthalate	85-68-7	C	5	1	1.20E-01	1.20E-01		1.20E+05	NC 1.0E-06
A018	SVOC	Carbazole	86-74-8	B2	5	1	5.70E-02	5.70E-02		8.60E+02	C 6.6E-05
A018	SVOC	Chrysene	218-01-9	B2	5	4	2.70E-02	2.00E-01		2.10E+03	C 9.5E-05
A018	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	5	2	2.50E-02	8.20E-02		2.10E+00	C 3.9E-02
A018	SVOC	Dibenzofuran	132-64-9	D	5	1	7.00E-02	7.00E-02		3.10E+03	NC 2.3E-05
A018	SVOC	Fluoranthene	206-44-0	D	5	4	4.90E-02	3.60E-01		2.20E+04	NC 1.6E-05
A018	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	4	2.60E-02	1.30E-01		2.10E+01	C 6.2E-03
A018	SVOC	Phenanthrene	85-01-8	D	5	4	2.80E-02	1.70E-01		2.90E+04	NC 5.9E-06
A018	SVOC	Pyrene	129-00-0	D	5	4	4.70E-02	2.80E-01		2.90E+04	NC 9.7E-06
A018	P/PCB	PCBs (total)	1336-36-3	B2	5	4	2.53E-02	1.92E+01		7.40E+00	C 2.6E+00
A018	INORG	Aluminum	7429-90-5	D	5	5	6.33E+02	1.63E+04	1.48E+04	9.20E+05	NC 1.6E-03
A018	INORG	Antimony	7440-36-0		5	2	1.10E+00	1.20E+00	4.40E-01	4.10E+02	NC 1.9E-03
A018	INORG	Arsenic	7440-38-2	A	5	5	2.30E+00	1.13E+01	1.13E+01	1.60E+01	C 2.7E-03
A018	INORG	Barium	7440-39-3	D	5	5	1.49E+01	1.21E+02	8.38E+01	6.70E+04	NC 5.6E-04
A018	INORG	Beryllium	7440-41-7	B1	5	4	9.70E-02	5.10E-01	5.70E-01	1.90E+03	NC
A018	INORG	Cadmium	7440-43-9	B1	5	4	2.20E-01	1.20E+00	5.52E-01	4.50E+02	NC 1.4E-03
A018	INORG	Chromium (total)	7440-47-3		5	5	5.10E+00	2.48E+02	2.82E+01	2.50E+03	NC 8.8E-02
A018	INORG	Cobalt	7440-48-4	B1	5	5	8.00E-01	3.46E+02	1.00E+01	1.30E+04	NC 2.6E-02
A018	INORG	Copper	7440-50-8	D	5	5	1.42E+01	2.24E+02	1.89E+01	4.10E+04	NC 5.0E-03
A018	INORG	Iron	7439-89-6	D	5	5	3.37E+03	5.32E+04	2.44E+04	3.10E+05	NC 9.3E-02
A018	INORG	Lead	7439-92-1	B2	5	5	2.10E+01	2.13E+02	2.00E+01	7.50E+02	NC 2.6E-01
A018	INORG	Manganese	7439-96-5	D	5	5	4.33E+01	4.64E+02	6.76E+02	1.90E+04	NC
A018	INORG	Mercury	7439-97-6	D	5	4	4.20E-02	1.10E+00	7.05E-02	1.36E+01	NC 7.5E-02
A018	INORG	Nickel	7440-02-0	A	5	5	3.00E+00	3.12E+02	1.83E+01	2.00E+04	NC 1.5E-02
A018	INORG	Selenium	7782-49-2	D	5	3	9.00E-01	2.50E+00	3.96E-01	5.10E+03	NC 4.1E-04
A018	INORG	Silver	7440-22-4	D	5	1	3.30E-01	3.30E-01		5.10E+03	NC 6.5E-05
A018	INORG	Thallium	7440-28-0		5	2	1.10E+00	2.00E+00	8.40E-01	6.80E+01	NC 1.7E-02
A018	INORG	Vanadium	7440-62-2		5	5	3.70E+00	1.06E+02	4.18E+01	7.20E+03	NC 8.9E-03
A018	INORG	Zinc	7440-66-6	D	5	5	4.31E+01	3.15E+02	5.48E+01	3.10E+05	NC 8.4E-04
A019	VOC	Acetone	67-64-1	ID	1	1	3.80E-02	3.80E-02		6.00E+03	NC 6.3E-06
A019	VOC	2-Butanone	78-93-3	ID	1	1	3.50E-03	3.50E-03		2.70E+04	NC 1.3E-07
A021	VOC	Acetone	67-64-1	ID	24	2	6.60E-03	4.90E-02		6.00E+03	NC 8.2E-06

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A021	VOC	2-Butanone	78-93-3	ID	24	3	3.90E-03	7.90E-03		2.70E+04 NC	2.9E-07
A021	VOC	Carbon Disulfide	75-15-0		24	2	1.23E-03	1.60E-03		1.20E+03 NC	1.3E-06
A021	VOC	Cyclohexane	110-82-7	ID	24	1	1.70E-03	1.70E-03		3.20E+04 NC	5.3E-08
A021	VOC	1,4-Dichlorobenzene	106-46-7	C	24	1	2.90E-03	2.90E-03		7.90E+01 C	3.7E-05
A021	VOC	Methyl Acetate	79-20-9		24	5	2.30E-03	1.70E-02		9.20E+04 NC	1.8E-07
A021	VOC	Methylcyclohexane	108-87-2		24	1	2.10E-03	2.10E-03		8.70E+03 NC	2.4E-07
A021	VOC	Methylene Chloride	75-09-2	B2	24	4	1.50E-03	2.20E-03		2.10E+02 C	1.0E-05
A021	VOC	Toluene	108-88-3	D	24	1	5.60E-04	5.60E-04		2.20E+03 NC	2.5E-07
A021	VOC	Trichloroethene	79-01-6	C-B2	24	1	2.10E-03	2.10E-03		6.12E+01 C	3.4E-05
A021	SVOC	Acetophenone	98-86-2	D	24	1	1.80E-01	1.80E-01			
A021	SVOC	Anthracene	120-12-7	D	24	2	3.40E-02	8.60E-02		2.40E+05 NC	3.6E-07
A021	SVOC	Benzaldehyde	100-52-7		22	3	3.30E-02	9.50E-02		6.20E+04 NC	1.5E-06
A021	SVOC	Benzo(a)anthracene	56-55-3	B2	24	5	2.20E-02	1.80E-01		2.10E+01 C	8.6E-03
A021	SVOC	Benzo(a)pyrene	50-32-8	B2	24	6	2.30E-02	2.20E-01		2.10E+00 C	1.0E-01
A021	SVOC	Benzo(b)fluoranthene	205-99-2	B2	24	7	2.50E-02	2.80E-01		2.10E+01 C	1.3E-02
A021	SVOC	Benzo(g,h,i)perylene	191-24-2	D	24	7	1.70E-02	1.20E-01		2.90E+04 NC	4.1E-06
A021	SVOC	Benzo(k)fluoranthene	207-08-9	B2	24	3	8.20E-02	9.00E-02		2.10E+02 C	4.3E-04
A021	SVOC	Biphenyl	92-52-4	D	24	1	1.90E-01	1.90E-01		2.30E+04 NC	8.3E-06
A021	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	24	2	2.60E-02	3.30E-01		1.20E+03 C	2.8E-04
A021	SVOC	Carbazole	86-74-8	B2	24	1	1.60E-02	1.60E-02		8.60E+02 C	1.9E-05
A021	SVOC	Chrysene	218-01-9	B2	24	6	1.80E-02	1.90E-01		2.10E+03 C	9.0E-05
A021	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	24	1	2.70E-02	2.70E-02		2.10E+00 C	1.3E-02
A021	SVOC	Dibenzofuran	132-64-9	D	24	1	1.50E-02	1.50E-02		3.10E+03 NC	4.8E-06
A021	SVOC	Di-n-butylphthalate	84-74-2	D	24	1	8.20E-02	8.20E-02		6.20E+04 NC	1.3E-06
A021	SVOC	Fluoranthene	206-44-0	D	24	9	2.00E-02	4.00E-01		2.20E+04 NC	1.8E-05
A021	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	24	4	2.30E-02	1.10E-01		2.10E+01 C	5.2E-03
A021	SVOC	Phenanthrene	85-01-8	D	24	3	6.80E-02	3.60E-01		2.90E+04 NC	1.2E-05
A021	SVOC	Pyrene	129-00-0	D	24	8	1.60E-02	3.40E-01		2.90E+04 NC	1.2E-05
A021	P/PCB	PCBs (total)	1336-36-3	B2	28	17	7.63E-02	7.99E+01		7.40E+00 C	1.1E+01
A021	INORG	Aluminum	7429-90-5	D	24	24	1.27E+03	2.60E+04	1.48E+04	9.20E+05 NC	1.2E-02
A021	INORG	Antimony	7440-36-0		24	4	2.90E-01	9.50E-01	4.40E-01	4.10E+02 NC	1.2E-03
A021	INORG	Arsenic	7440-38-2	A	24	24	1.20E+00	1.06E+01	1.13E+01	1.60E+01 C	
A021	INORG	Barium	7440-39-3	D	24	24	5.10E+00	1.53E+03	8.38E+01	6.70E+04 NC	2.2E-02
A021	INORG	Beryllium	7440-41-7	B1	24	2	2.60E-01	5.00E-01	5.70E-01	1.90E+03 NC	
A021	INORG	Cadmium	7440-43-9	B1	24	15	3.10E-02	1.20E+00	5.52E-01	4.50E+02 NC	1.4E-03
A021	INORG	Chromium (total)	7440-47-3		24	24	2.70E+00	1.01E+02	2.82E+01	2.50E+03 NC	2.9E-02
A021	INORG	Cobalt	7440-48-4	B1	24	24	1.50E+00	1.28E+02	1.00E+01	1.30E+04 NC	9.1E-03

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A021	INORG	Copper	7440-50-8	D	24	24	1.05E+01	8.66E+02	1.89E+01	4.10E+04 NC	2.1E-02
A021	INORG	Cyanide (total)	57-12-5	D	24	1	2.30E-01	2.30E-01		1.20E+04 NC	1.9E-05
A021	INORG	Iron	7439-89-6	D	24	24	1.84E+03	3.42E+04	2.44E+04	3.10E+05 NC	3.2E-02
A021	INORG	Lead	7439-92-1	B2	24	24	3.20E+00	1.34E+03	2.00E+01	7.50E+02 NC	1.8E+00
A021	INORG	Manganese	7439-96-5	D	24	24	2.52E+01	7.24E+02	6.76E+02	1.90E+04 NC	2.5E-03
A021	INORG	Mercury	7439-97-6	D	24	20	1.20E-02	1.04E+02	7.05E-02	1.36E+01 NC	7.6E+00
A021	INORG	Nickel	7440-02-0	A	24	24	7.00E+00	4.64E+02	1.83E+01	2.00E+04 NC	2.2E-02
A021	INORG	Selenium	7782-49-2	D	24	9	3.00E-01	1.00E+00	3.96E-01	5.10E+03 NC	1.2E-04
A021	INORG	Silver	7440-22-4	D	24	4	1.73E-01	5.20E-01		5.10E+03 NC	1.0E-04
A021	INORG	Thallium	7440-28-0		24	4	4.80E-01	7.20E-01	8.40E-01	6.80E+01 NC	
A021	INORG	Vanadium	7440-62-2		24	24	3.10E+00	3.94E+01	4.18E+01	7.20E+03 NC	
A021	INORG	Zinc	7440-66-6	D	24	24	2.10E+01	1.20E+03	5.48E+01	3.10E+05 NC	3.7E-03
A022	VOC	Acetone	67-64-1	ID	6	1	3.70E-03	3.70E-03		6.00E+03 NC	6.2E-07
A022	VOC	Benzene	71-43-2	A	6	1	4.10E-04	4.10E-04		1.30E+01 C	3.2E-05
A022	VOC	Methylene Chloride	75-09-2	B2	6	2	1.10E-03	1.30E-03		2.10E+02 C	6.2E-06
A022	VOC	Toluene	108-88-3	D	6	1	4.73E-04	4.73E-04		2.20E+03 NC	2.1E-07
A022	SVOC	Acenaphthene	83-32-9		6	1	1.30E-01	1.30E-01		2.90E+04 NC	4.5E-06
A022	SVOC	Anthracene	120-12-7	D	6	3	1.60E-02	2.60E-01		2.40E+05 NC	1.1E-06
A022	SVOC	Benzo(a)anthracene	56-55-3	B2	6	6	2.20E-02	3.80E-01		2.10E+01 C	1.8E-02
A022	SVOC	Benzo(a)pyrene	50-32-8	B2	6	6	2.30E-02	3.90E-01		2.10E+00 C	1.9E-01
A022	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	6	2.90E-02	4.80E-01		2.10E+01 C	2.3E-02
A022	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	3	5.35E-02	1.90E-01		2.90E+04 NC	6.6E-06
A022	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	3	4.35E-02	3.10E-01		2.10E+02 C	1.5E-03
A022	SVOC	Carbazole	86-74-8	B2	6	1	1.40E-01	1.40E-01		8.60E+02 C	1.6E-04
A022	SVOC	Chrysene	218-01-9	B2	6	6	3.40E-02	4.10E-01		2.10E+03 C	2.0E-04
A022	SVOC	Dibenzofuran	132-64-9	D	6	1	5.90E-02	5.90E-02		3.10E+03 NC	1.9E-05
A022	SVOC	Fluoranthene	206-44-0	D	6	6	2.80E-02	1.40E+00		2.20E+04 NC	6.4E-05
A022	SVOC	Fluorene	86-73-7	D	6	1	1.20E-01	1.20E-01		2.60E+04 NC	4.6E-06
A022	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	3	3.95E-02	1.90E-01		2.10E+01 C	9.0E-03
A022	SVOC	Phenanthrene	85-01-8	D	6	5	3.10E-02	1.30E+00		2.90E+04 NC	4.5E-05
A022	SVOC	Pyrene	129-00-0	D	6	6	2.90E-02	7.60E-01		2.90E+04 NC	2.6E-05
A022	P/PCB	PCBs (total)	1336-36-3	B2	6	3	1.43E-02	5.21E-02		7.40E+00 C	7.0E-03
A022	INORG	Aluminum	7429-90-5	D	6	6	1.29E+03	5.76E+03	1.48E+04	9.20E+05 NC	
A022	INORG	Antimony	7440-36-0		6	2	4.55E-01	1.41E+03	4.40E-01	4.10E+02 NC	3.4E+00
A022	INORG	Arsenic	7440-38-2	A	6	6	1.30E+00	2.46E+01	1.13E+01	1.60E+01 C	8.3E-01
A022	INORG	Barium	7440-39-3	D	6	6	6.30E+00	5.03E+01	8.38E+01	6.70E+04 NC	
A022	INORG	Beryllium	7440-41-7	B1	6	4	1.65E-01	6.40E-01	5.70E-01	1.90E+03 NC	3.7E-05

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A022	INORG	Cadmium	7440-43-9	B1	6	6	4.90E-02	4.20E-01	5.52E-01	4.50E+02	NC
A022	INORG	Chromium (total)	7440-47-3		6	6	2.40E+00	8.70E+00	2.82E+01	2.50E+03	NC
A022	INORG	Cobalt	7440-48-4	B1	6	6	1.80E+00	3.60E+00	1.00E+01	1.30E+04	NC
A022	INORG	Copper	7440-50-8	D	6	6	3.70E+00	6.54E+02	1.89E+01	4.10E+04	NC 1.5E-02
A022	INORG	Cyanide (amenable)	57-12-5A		6	2	8.80E-02	2.20E-01		1.20E+04	NC 1.8E-05
A022	INORG	Cyanide (total)	57-12-5	D	6	3	8.80E-02	3.40E-01		1.20E+04	NC 2.8E-05
A022	INORG	Iron	7439-89-6	D	6	6	2.83E+03	1.48E+04	2.44E+04	3.10E+05	NC
A022	INORG	Lead	7439-92-1	B2	6	6	2.90E+00	1.06E+04	2.00E+01	7.50E+02	NC 1.4E+01
A022	INORG	Manganese	7439-96-5	D	6	6	3.47E+01	3.33E+02	6.76E+02	1.90E+04	NC
A022	INORG	Mercury	7439-97-6	D	6	4	2.30E-02	6.30E-02	7.05E-02	1.36E+01	NC
A022	INORG	Nickel	7440-02-0	A	6	6	2.40E+00	2.17E+01	1.83E+01	2.00E+04	NC 1.7E-04
A022	INORG	Silver	7440-22-4	D	6	1	2.90E+00	2.90E+00		5.10E+03	NC 5.7E-04
A022	INORG	Thallium	7440-28-0		6	2	5.50E-01	6.50E-01	8.40E-01	6.80E+01	NC
A022	INORG	Vanadium	7440-62-2		6	6	4.30E+00	1.28E+01	4.18E+01	7.20E+03	NC
A022	INORG	Zinc	7440-66-6	D	6	6	2.52E+01	8.37E+01	5.48E+01	3.10E+05	NC 9.3E-05
A024	INORG	Aluminum	7429-90-5	D	1	1	1.30E+03	1.30E+03	1.48E+04	9.20E+05	NC
A024	INORG	Arsenic	7440-38-2	A	1	1	1.00E+00	1.00E+00	1.13E+01	1.60E+01	C
A024	INORG	Barium	7440-39-3	D	1	1	4.92E+01	4.92E+01	8.38E+01	6.70E+04	NC
A024	INORG	Cadmium	7440-43-9	B1	1	1	3.20E-01	3.20E-01	5.52E-01	4.50E+02	NC
A024	INORG	Chromium (total)	7440-47-3		1	1	6.70E+00	6.70E+00	2.82E+01	2.50E+03	NC
A024	INORG	Cobalt	7440-48-4	B1	1	1	9.50E-01	9.50E-01	1.00E+01	1.30E+04	NC
A024	INORG	Copper	7440-50-8	D	1	1	2.70E+00	2.70E+00	1.89E+01	4.10E+04	NC
A024	INORG	Iron	7439-89-6	D	1	1	2.90E+03	2.90E+03	2.44E+04	3.10E+05	NC
A024	INORG	Lead	7439-92-1	B2	1	1	2.20E+00	2.20E+00	2.00E+01	7.50E+02	NC
A024	INORG	Manganese	7439-96-5	D	1	1	9.74E+01	9.74E+01	6.76E+02	1.90E+04	NC
A024	INORG	Nickel	7440-02-0	A	1	1	4.80E+00	4.80E+00	1.83E+01	2.00E+04	NC
A024	INORG	Thallium	7440-28-0		1	1	6.70E-01	6.70E-01	8.40E-01	6.80E+01	NC
A024	INORG	Vanadium	7440-62-2		1	1	3.30E+00	3.30E+00	4.18E+01	7.20E+03	NC
A024	INORG	Zinc	7440-66-6	D	1	1	2.82E+01	2.82E+01	5.48E+01	3.10E+05	NC
Background	VOC	Acetone	67-64-1	ID	9	4	4.00E-03	3.40E-02		6.00E+03	NC 5.7E-06
Background	VOC	Methyl Acetate	79-20-9		9	1	3.50E-03	3.50E-03		9.20E+04	NC 3.8E-08
Background	VOC	Methylene Chloride	75-09-2	B2	9	1	4.00E-03	4.00E-03		2.10E+02	C 1.9E-05
Background	INORG	Aluminum	7429-90-5	D	9	9	9.68E+03	1.77E+04	1.48E+04	9.20E+05	NC 3.1E-03
Background	INORG	Antimony	7440-36-0		9	1	1.01E+00	1.01E+00	4.40E-01	4.10E+02	NC 1.4E-03
Background	INORG	Arsenic	7440-38-2	A	9	9	5.90E+00	1.15E+01	1.13E+01	1.60E+01	C 1.5E-02
Background	INORG	Barium	7440-39-3	D	9	9	2.86E+01	1.18E+02	8.38E+01	6.70E+04	NC 5.1E-04
Background	INORG	Beryllium	7440-41-7	B1	9	8	1.80E-01	4.70E-01	5.70E-01	1.90E+03	NC

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
Background	INORG	Cadmium	7440-43-9	B1	9	6	5.13E-02	1.30E-01	5.52E-01	4.50E+02	NC
Background	INORG	Chromium (total)	7440-47-3		9	9	1.47E+01	4.36E+01	2.82E+01	2.50E+03	NC
Background	INORG	Cobalt	7440-48-4	B1	9	9	2.40E+00	1.22E+01	1.00E+01	1.30E+04	NC
Background	INORG	Copper	7440-50-8	D	9	9	9.60E+00	3.49E+01	1.89E+01	4.10E+04	NC
Background	INORG	Iron	7439-89-6	D	9	9	1.62E+04	3.26E+04	2.44E+04	3.10E+05	NC
Background	INORG	Lead	7439-92-1	B2	9	9	1.32E+01	2.25E+01	2.00E+01	7.50E+02	NC
Background	INORG	Manganese	7439-96-5	D	9	9	4.24E+01	1.20E+03	6.76E+02	1.90E+04	NC
Background	INORG	Mercury	7439-97-6	D	9	5	3.30E-02	5.00E-02	7.05E-02	1.36E+01	NC
Background	INORG	Nickel	7440-02-0	A	9	9	7.70E+00	2.08E+01	1.83E+01	2.00E+04	NC
Background	INORG	Selenium	7782-49-2	D	9	4	3.90E-01	6.75E-01	3.96E-01	5.10E+03	NC
Background	INORG	Thallium	7440-28-0		9	1	1.20E+00	1.20E+00	8.40E-01	6.80E+01	NC
Background	INORG	Vanadium	7440-62-2		9	9	2.30E+01	6.98E+01	4.18E+01	7.20E+03	NC
Background	INORG	Zinc	7440-66-6	D	9	9	2.60E+01	5.52E+01	5.48E+01	3.10E+05	NC
P201(GM)	VOC	Acetone	67-64-1	ID	1	1	4.00E-03	4.00E-03		6.00E+03	NC
P201(GM)	P/PCB	PCBs (total)	1336-36-3	B2	5	1	2.04E+00	2.04E+00		7.40E+00	C
P201(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.07E+04	1.07E+04	1.48E+04	9.20E+05	NC
P201(GM)	INORG	Arsenic	7440-38-2	A	1	1	5.90E+00	5.90E+00	1.13E+01	1.60E+01	C
P201(GM)	INORG	Barium	7440-39-3	D	1	1	4.32E+01	4.32E+01	8.38E+01	6.70E+04	NC
P201(GM)	INORG	Beryllium	7440-41-7	B1	1	1	1.80E-01	1.80E-01	5.70E-01	1.90E+03	NC
P201(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.47E+01	1.47E+01	2.82E+01	2.50E+03	NC
P201(GM)	INORG	Cobalt	7440-48-4	B1	1	1	8.70E+00	8.70E+00	1.00E+01	1.30E+04	NC
P201(GM)	INORG	Copper	7440-50-8	D	1	1	1.23E+01	1.23E+01	1.89E+01	4.10E+04	NC
P201(GM)	INORG	Iron	7439-89-6	D	1	1	1.70E+04	1.70E+04	2.44E+04	3.10E+05	NC
P201(GM)	INORG	Lead	7439-92-1	B2	1	1	1.32E+01	1.32E+01	2.00E+01	7.50E+02	NC
P201(GM)	INORG	Manganese	7439-96-5	D	1	1	2.71E+02	2.71E+02	6.76E+02	1.90E+04	NC
P201(GM)	INORG	Nickel	7440-02-0	A	1	1	1.06E+01	1.06E+01	1.83E+01	2.00E+04	NC
P201(GM)	INORG	Vanadium	7440-62-2		1	1	2.71E+01	2.71E+01	4.18E+01	7.20E+03	NC
P201(GM)	INORG	Zinc	7440-66-6	D	1	1	3.02E+01	3.02E+01	5.48E+01	3.10E+05	NC
P205(GM)	VOC	Acetone	67-64-1	ID	1	1	1.20E-02	1.20E-02		6.00E+03	NC
P205(GM)	P/PCB	PCBs (total)	1336-36-3	B2	36	35	9.52E-02	5.98E+01		7.40E+00	C
P205(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.02E+04	1.02E+04	1.48E+04	9.20E+05	NC
P205(GM)	INORG	Arsenic	7440-38-2	A	1	1	6.80E+00	6.80E+00	1.13E+01	1.60E+01	C
P205(GM)	INORG	Barium	7440-39-3	D	1	1	4.55E+01	4.55E+01	8.38E+01	6.70E+04	NC
P205(GM)	INORG	Beryllium	7440-41-7	B1	1	1	2.40E-01	2.40E-01	5.70E-01	1.90E+03	NC
P205(GM)	INORG	Cadmium	7440-43-9	B1	1	1	6.20E-02	6.20E-02	5.52E-01	4.50E+02	NC
P205(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.60E+01	1.60E+01	2.82E+01	2.50E+03	NC
P205(GM)	INORG	Cobalt	7440-48-4	B1	1	1	7.30E+00	7.30E+00	1.00E+01	1.30E+04	NC

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
P205(GM)	INORG	Copper	7440-50-8	D	1	1	1.53E+01	1.53E+01	1.89E+01	4.10E+04	NC
P205(GM)	INORG	Iron	7439-89-6	D	1	1	1.62E+04	1.62E+04	2.44E+04	3.10E+05	NC
P205(GM)	INORG	Lead	7439-92-1	B2	1	1	2.03E+01	2.03E+01	2.00E+01	7.50E+02	NC
P205(GM)	INORG	Manganese	7439-96-5	D	1	1	1.61E+02	1.61E+02	6.76E+02	1.90E+04	NC
P205(GM)	INORG	Nickel	7440-02-0	A	1	1	1.82E+01	1.82E+01	1.83E+01	2.00E+04	NC
P205(GM)	INORG	Selenium	7782-49-2	D	1	1	3.90E-01	3.90E-01	3.96E-01	5.10E+03	NC
P205(GM)	INORG	Vanadium	7440-62-2		1	1	2.30E+01	2.30E+01	4.18E+01	7.20E+03	NC
P205(GM)	INORG	Zinc	7440-66-6	D	1	1	3.95E+01	3.95E+01	5.48E+01	3.10E+05	NC
P215(GM)	P/PCB	PCBs (total)	1336-36-3	B2	32	29	8.46E-02	3.89E+02		7.40E+00	C
P216(GM)	P/PCB	PCBs (total)	1336-36-3	B2	89	73	1.59E-02	2.33E+02		7.40E+00	C
Plant_Boundary	VOC	Acetone	67-64-1	ID	7	1	5.56E-02	5.56E-02		6.00E+03	NC
Plant_Boundary	VOC	2-Butanone	78-93-3	ID	7	1	3.85E-03	3.85E-03		2.70E+04	NC
Plant_Boundary	VOC	Methyl Acetate	79-20-9		7	2	4.15E-03	8.25E-03		9.20E+04	NC
Plant_Boundary	VOC	Toluene	108-88-3	D	7	2	5.25E-04	6.25E-04		2.20E+03	NC
Plant_Boundary	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	1	5.55E-02	5.55E-02		2.10E+01	C
Plant_Boundary	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	6.95E-02	6.95E-02		1.20E+03	C
Plant_Boundary	SVOC	Chrysene	218-01-9	B2	7	1	4.73E-02	4.73E-02		2.10E+03	C
Plant_Boundary	SVOC	Fluoranthene	206-44-0	D	7	1	8.78E-02	8.78E-02		2.20E+04	NC
Plant_Boundary	SVOC	Phenanthrene	85-01-8	D	7	1	7.15E-02	7.15E-02		2.90E+04	NC
Plant_Boundary	SVOC	Pyrene	129-00-0	D	7	1	6.63E-02	6.63E-02		2.90E+04	NC
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	8	5	3.49E-02	3.13E+01		7.40E+00	C
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	1.11E+04	1.97E+04	1.48E+04	9.20E+05	NC
Plant_Boundary	INORG	Antimony	7440-36-0		6	3	7.80E-01	1.01E+00	4.40E-01	4.10E+02	NC
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7	1.70E+00	1.05E+01	1.13E+01	1.60E+01	C
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	1.41E+01	9.14E+01	8.38E+01	6.70E+04	NC
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	5	1.45E-01	6.40E-01	5.70E-01	1.90E+03	NC
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	6	5.13E-02	2.35E-01	5.52E-01	4.50E+02	NC
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	9.20E+00	3.07E+01	2.82E+01	2.50E+03	NC
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	1.70E+00	1.44E+01	1.00E+01	1.30E+04	NC
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	1.77E+01	4.27E+02	1.89E+01	4.10E+04	NC
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7	3.96E+03	2.39E+04	2.44E+04	3.10E+05	NC
Plant_Boundary	INORG	Lead	7439-92-1	B2	7	7	1.59E+01	4.19E+01	2.00E+01	7.50E+02	NC
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	6.12E+01	6.81E+02	6.76E+02	1.90E+04	NC
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	4.55E-02	2.45E-01	7.05E-02	1.36E+01	NC
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	1.09E+01	3.89E+01	1.83E+01	2.00E+04	NC
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	3	6.35E-01	9.80E-01	3.96E-01	5.10E+03	NC
Plant_Boundary	INORG	Thallium	7440-28-0		7	1	5.45E-01	5.45E-01	8.40E-01	6.80E+01	NC

**Table 2-1a: On-Site Surface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7	4.40E+00	3.41E+01	4.18E+01	7.20E+03	NC
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	3.96E+01	1.05E+02	5.48E+01	3.10E+05	NC
											1.6E-04
	Notes:										
	Only constituents detected at each area are shown.										
	Shaded cells represent ratios of conc to the screening criteria greater than 1.										
	Ratios are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.										
	The Screening Criteria for residential and industrial soil is the lower of the integrated Screening Criteria at:										
		target cancer risk =	1E-05								
		target hazard quotient =	1								
	The Screening Criteria for Pyrene were used as surrogates for Phenanthrene and Benzo(g,h,i)perylene.										
	The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.										
	The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).										
	The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Criteria for 4-Methylphenol.										
	The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs) for cancer effects										
	and Aroclor 1254 for noncancer effects.										
	The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.										
	The Screening Criteria for Mercury was calculated by ENVIRON to account for the vapor inhalation pathway using:										
	EPA Region 9 equations, RfC from IRIS, and chemical properties from EPA's Soil Screening Guidance.										
	C - The Screening Criterion is based on cancer risk.										
	NC - The Screening Criterion is based on noncancer effects.										
	Chem Group - Chemical Group										
	Carc Class - EPA Weight-of-Evidence Cancer Classification										
	Plant Boundary includes locations: B-X261Y356, BK-X045Y258, MW-X033Y147S, MW-X045Y258D, MW-X178Y367D, MW-X234Y157D,										
	MW-X261Y356D, and MW-X269Y201D.										

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A001	VOC	Acetone	67-64-1	ID	27	5	1.45E-02	4.50E-02		6.00E+03 NC	7.5E-06
A001	VOC	Benzene	71-43-2	A	27	1	7.30E-04	7.30E-04		1.30E+01 C	5.6E-05
A001	VOC	2-Butanone	78-93-3	ID	27	4	3.70E-03	1.10E-02		2.70E+04 NC	4.1E-07
A001	VOC	Carbon Disulfide	75-15-0		27	1	1.30E-03	1.30E-03		1.20E+03 NC	1.1E-06
A001	VOC	Cumene	98-82-8	D	27	1	1.40E-03	1.40E-03		2.00E+03 NC	7.0E-07
A001	VOC	cis-1,2-Dichloroethene	156-59-2	D	27	2	1.00E-03	3.75E-02		1.50E+02 NC	2.5E-04
A001	VOC	Methylcyclohexane	108-87-2		27	3	1.30E-03	2.61E-03		8.70E+03 NC	3.0E-07
A001	VOC	Methylene Chloride	75-09-2	B2	27	4	1.15E-03	2.80E-03		2.10E+02 C	1.3E-05
A001	VOC	Toluene	108-88-3	D	27	4	1.40E-03	2.80E-03		2.20E+03 NC	1.3E-06
A001	VOC	Trichloroethene	79-01-6	C-B2	27	2	2.30E-03	4.05E-03		6.12E+01 C	6.6E-05
A001	VOC	Vinyl Chloride	75-01-4	A	27	1	4.00E-03	4.00E-03		7.50E+00 C	5.3E-04
A001	VOC	Xylenes (total)	1330-20-7	ID	27	1	6.40E-03	6.40E-03		9.00E+02 NC	7.1E-06
A001	SVOC	Acenaphthene	83-32-9		27	1	1.10E-01	1.10E-01		2.90E+04 NC	3.8E-06
A001	SVOC	Anthracene	120-12-7	D	27	1	9.50E-02	9.50E-02		2.40E+05 NC	4.0E-07
A001	SVOC	Benzo(a)anthracene	56-55-3	B2	27	4	5.90E-02	3.70E-01		2.10E+01 C	1.8E-02
A001	SVOC	Benzo(a)pyrene	50-32-8	B2	27	3	6.80E-02	3.70E-01		2.10E+00 C	1.8E-01
A001	SVOC	Benzo(b)fluoranthene	205-99-2	B2	27	4	4.90E-02	4.40E-01		2.10E+01 C	2.1E-02
A001	SVOC	Benzo(g,h,i)perylene	191-24-2	D	27	3	8.50E-02	1.80E-01		2.90E+04 NC	6.2E-06
A001	SVOC	Benzo(k)fluoranthene	207-08-9	B2	27	3	5.80E-02	2.10E-01		2.10E+02 C	1.0E-03
A001	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	27	4	3.03E-02	1.00E+01		1.20E+03 C	8.3E-03
A001	SVOC	Carbazole	86-74-8	B2	27	1	4.60E-02	4.60E-02		8.60E+02 C	5.3E-05
A001	SVOC	Chrysene	218-01-9	B2	27	5	5.00E-02	4.70E-01		2.10E+03 C	2.2E-04
A001	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	27	1	4.20E-02	4.20E-02		2.10E+00 C	2.0E-02
A001	SVOC	Fluoranthene	206-44-0	D	27	5	8.80E-02	1.20E+00		2.20E+04 NC	5.5E-05
A001	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	27	2	8.50E-02	1.80E-01		2.10E+01 C	8.6E-03
A001	SVOC	Phenanthrene	85-01-8	D	27	5	5.60E-02	7.40E-01		2.90E+04 NC	2.6E-05
A001	SVOC	Pyrene	129-00-0	D	27	5	1.10E-01	1.10E+00		2.90E+04 NC	3.8E-05
A001	P/PCB	PCBs (total)	1336-36-3	B2	27	4	4.36E-02	6.42E-01		7.40E+00 C	8.7E-02
A001	INORG	Aluminum	7429-90-5	D	27	27	4.93E+02	3.47E+04	1.48E+04	9.20E+05 NC	2.2E-02
A001	INORG	Antimony	7440-36-0		25	2	1.10E+00	5.90E+00	4.40E-01	4.10E+02 NC	1.3E-02
A001	INORG	Arsenic	7440-38-2	A	27	27	9.00E-01	1.96E+01	1.13E+01	1.60E+01 C	5.2E-01
A001	INORG	Barium	7440-39-3	D	27	27	4.60E+00	2.79E+02	8.38E+01	6.70E+04 NC	2.9E-03
A001	INORG	Beryllium	7440-41-7	B1	27	17	3.40E-01	6.25E+00	5.70E-01	1.90E+03 NC	3.0E-03
A001	INORG	Cadmium	7440-43-9	B1	27	12	2.90E-01	5.00E+00	5.52E-01	4.50E+02 NC	9.9E-03
A001	INORG	Chromium (total)	7440-47-3		27	27	4.60E+00	5.78E+01	2.82E+01	2.50E+03 NC	1.2E-02
A001	INORG	Cobalt	7440-48-4	B1	27	27	3.80E-01	3.10E+01	1.00E+01	1.30E+04 NC	1.6E-03
A001	INORG	Copper	7440-50-8	D	27	27	2.00E+00	1.16E+03	1.89E+01	4.10E+04 NC	2.8E-02
A001	INORG	Cyanide (amenable)	57-12-5A		27	1	7.13E-01	7.13E-01		1.20E+04 NC	5.9E-05
A001	INORG	Cyanide (total)	57-12-5	D	27	2	3.40E-01	5.78E-01		1.20E+04 NC	4.8E-05

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A001	INORG	Iron	7439-89-6	D	27	27	1.68E+03	4.96E+04	2.44E+04	3.10E+05 NC	8.1E-02
A001	INORG	Lead	7439-92-1	B2	27	27	1.50E+00	4.01E+02	2.00E+01	7.50E+02 NC	5.1E-01
A001	INORG	Manganese	7439-96-5	D	27	27	7.30E+00	1.69E+03	6.76E+02	1.90E+04 NC	5.3E-02
A001	INORG	Mercury	7439-97-6	D	27	18	1.90E-02	5.20E-01	7.05E-02	1.36E+01 NC	3.3E-02
A001	INORG	Nickel	7440-02-0	A	27	27	2.30E+00	1.11E+02	1.83E+01	2.00E+04 NC	4.6E-03
A001	INORG	Selenium	7782-49-2	D	27	8	3.30E-01	1.80E+00	3.96E-01	5.10E+03 NC	2.8E-04
A001	INORG	Silver	7440-22-4	D	27	1	6.00E-01	6.00E-01		5.10E+03 NC	1.2E-04
A001	INORG	Thallium	7440-28-0		27	7	5.95E-01	4.00E+00	8.40E-01	6.80E+01 NC	4.6E-02
A001	INORG	Vanadium	7440-62-2		27	27	2.40E+00	8.11E+01	4.18E+01	7.20E+03 NC	5.5E-03
A001	INORG	Zinc	7440-66-6	D	27	27	9.60E+00	7.11E+02	5.48E+01	3.10E+05 NC	2.1E-03
A002	VOC	2-Butanone	78-93-3	ID	8	3	3.20E-03	3.60E-03		2.70E+04 NC	1.3E-07
A002	VOC	Chloroethane	75-00-3		8	1	3.30E-03	3.30E-03		6.50E+01 C	5.1E-05
A002	VOC	1,1-Dichloroethane	75-34-3	C	8	1	1.30E-02	1.30E-02		1.70E+03 NC	7.6E-06
A002	VOC	Methyl Acetate	79-20-9		8	1	1.30E-03	1.30E-03		9.20E+04 NC	1.4E-08
A002	VOC	Methylene Chloride	75-09-2	B2	8	4	3.70E-03	5.00E-03		2.10E+02 C	2.4E-05
A002	VOC	Trichloroethene	79-01-6	C-B2	8	1	1.20E-03	1.20E-03		6.12E+01 C	2.0E-05
A002	INORG	Aluminum	7429-90-5	D	8	8	1.97E+03	3.31E+04	1.48E+04	9.20E+05 NC	2.0E-02
A002	INORG	Arsenic	7440-38-2	A	8	8	1.90E+00	1.20E+01	1.13E+01	1.60E+01 C	4.6E-02
A002	INORG	Barium	7440-39-3	D	8	8	1.82E+01	6.98E+01	8.38E+01	6.70E+04 NC	
A002	INORG	Beryllium	7440-41-7	B1	8	6	1.60E-01	2.10E+00	5.70E-01	1.90E+03 NC	8.1E-04
A002	INORG	Cadmium	7440-43-9	B1	8	7	1.10E-01	2.50E+00	5.52E-01	4.50E+02 NC	4.3E-03
A002	INORG	Chromium (total)	7440-47-3		8	8	8.00E+00	3.04E+01	2.82E+01	2.50E+03 NC	9.0E-04
A002	INORG	Cobalt	7440-48-4	B1	8	8	1.50E+00	9.70E+00	1.00E+01	1.30E+04 NC	
A002	INORG	Copper	7440-50-8	D	8	8	1.19E+01	5.59E+02	1.89E+01	4.10E+04 NC	1.3E-02
A002	INORG	Iron	7439-89-6	D	8	8	5.91E+03	2.58E+04	2.44E+04	3.10E+05 NC	4.6E-03
A002	INORG	Lead	7439-92-1	B2	8	8	1.17E+01	7.94E+01	2.00E+01	7.50E+02 NC	7.9E-02
A002	INORG	Manganese	7439-96-5	D	8	8	1.17E+02	4.70E+02	6.76E+02	1.90E+04 NC	
A002	INORG	Mercury	7439-97-6	D	8	5	2.70E-02	1.18E-01	7.05E-02	1.36E+01 NC	3.5E-03
A002	INORG	Nickel	7440-02-0	A	8	8	5.70E+00	6.03E+01	1.83E+01	2.00E+04 NC	2.1E-03
A002	INORG	Selenium	7782-49-2	D	8	3	5.00E-01	6.80E-01	3.96E-01	5.10E+03 NC	5.6E-05
A002	INORG	Vanadium	7440-62-2		8	8	6.80E+00	3.06E+01	4.18E+01	7.20E+03 NC	
A002	INORG	Zinc	7440-66-6	D	8	8	3.75E+01	1.82E+02	5.48E+01	3.10E+05 NC	4.1E-04
A004	VOC	Acetone	67-64-1	ID	42	19	8.10E-03	2.21E-01		6.00E+03 NC	3.7E-05
A004	VOC	Benzene	71-43-2	A	42	4	3.98E-04	1.40E-03		1.30E+01 C	1.1E-04
A004	VOC	2-Butanone	78-93-3	ID	42	17	3.00E-03	3.60E-02		2.70E+04 NC	1.3E-06
A004	VOC	Carbon Disulfide	75-15-0		42	14	1.30E-03	3.40E-01		1.20E+03 NC	2.8E-04
A004	VOC	Chlorobenzene	108-90-7	D	42	5	5.20E-04	3.50E+00		5.30E+02 NC	6.6E-03
A004	VOC	Cumene	98-82-8	D	42	8	8.90E-04	1.42E-02		2.00E+03 NC	7.1E-06
A004	VOC	Cyclohexane	110-82-7	ID	42	3	1.90E-03	2.60E-03		3.20E+04 NC	8.1E-08

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A004	VOC	1,2-Dichlorobenzene	95-50-1	D	42	3	1.60E-03	5.50E-01		4.10E+03 NC	1.3E-04
A004	VOC	1,3-Dichlorobenzene	541-73-1	D	42	9	4.43E-04	1.31E+00		6.30E+01 NC	2.1E-02
A004	VOC	1,4-Dichlorobenzene	106-46-7	C	42	9	3.55E-04	3.57E+00		7.90E+01 C	4.5E-02
A004	VOC	1,2-Dichloroethane	107-06-2	B2	42	1	1.60E-02	1.60E-02		6.00E+00 C	2.7E-03
A004	VOC	cis-1,2-Dichloroethene	156-59-2	D	42	5	7.50E-04	2.50E-03		1.50E+02 NC	1.7E-05
A004	VOC	Ethyl Benzene	100-41-4	D	42	5	3.28E-04	3.20E-03		7.40E+03 NC	4.3E-07
A004	VOC	Methyl Acetate	79-20-9		42	5	1.40E-03	7.40E-02		9.20E+04 NC	8.0E-07
A004	VOC	4-Methyl-2-pentanone	108-10-1	ID	42	1	5.20E-03	5.20E-03		2.80E+03 NC	1.9E-06
A004	VOC	Methylcyclohexane	108-87-2		42	6	7.10E-04	2.80E-02		8.70E+03 NC	3.2E-06
A004	VOC	Methylene Chloride	75-09-2	B2	42	2	3.00E-03	8.60E-03		2.10E+02 C	4.1E-05
A004	VOC	Tetrachloroethene	127-18-4	C-B2	42	6	5.50E-04	5.20E-01		3.40E+01 C	1.5E-02
A004	VOC	Toluene	108-88-3	D	42	7	5.30E-04	1.40E-02		2.20E+03 NC	6.4E-06
A004	VOC	1,2,4-Trichlorobenzene	120-82-1	D	42	2	2.30E-03	1.76E-02		5.60E+03 NC	3.1E-06
A004	VOC	Trichloroethene	79-01-6	C-B2	42	6	8.70E-04	5.70E-02		6.12E+01 C	9.3E-04
A004	VOC	Xylenes (total)	1330-20-7	ID	42	3	3.10E-03	1.20E-02		9.00E+02 NC	1.3E-05
A004	SVOC	Acenaphthene	83-32-9		42	7	2.08E-02	5.20E-01		2.90E+04 NC	1.8E-05
A004	SVOC	Acetophenone	98-86-2	D	42	1	6.60E-02	6.60E-02			
A004	SVOC	Anthracene	120-12-7	D	42	5	5.70E-02	8.20E-01		2.40E+05 NC	3.4E-06
A004	SVOC	Benzaldehyde	100-52-7		42	1	2.00E-02	2.00E-02		6.20E+04 NC	3.2E-07
A004	SVOC	Benzo(a)anthracene	56-55-3	B2	42	13	6.20E-02	4.10E-01		2.10E+01 C	2.0E-02
A004	SVOC	Benzo(a)pyrene	50-32-8	B2	42	14	6.90E-02	9.40E-01		2.10E+00 C	4.5E-01
A004	SVOC	Benzo(b)fluoranthene	205-99-2	B2	42	16	3.10E-02	1.40E+00		2.10E+01 C	6.7E-02
A004	SVOC	Benzo(g,h,i)perylene	191-24-2	D	42	12	2.60E-02	3.90E-01		2.90E+04 NC	1.3E-05
A004	SVOC	Benzo(k)fluoranthene	207-08-9	B2	42	11	7.10E-02	4.80E-01		2.10E+02 C	2.3E-03
A004	SVOC	Biphenyl	92-52-4	D	42	2	2.00E-02	5.70E-02		2.30E+04 NC	2.5E-06
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	42	19	2.00E-02	1.80E+01		1.20E+03 C	1.5E-02
A004	SVOC	Caprolactam	105-60-2		42	2	1.70E-01	2.70E-01		3.10E+05 NC	8.7E-07
A004	SVOC	Carbazole	86-74-8	B2	42	5	7.53E-02	4.30E-01		8.60E+02 C	5.0E-04
A004	SVOC	Chrysene	218-01-9	B2	42	14	5.90E-02	5.20E-01		2.10E+03 C	2.5E-04
A004	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	42	2	3.35E-02	6.90E-02		2.10E+00 C	3.3E-02
A004	SVOC	Dibenzofuran	132-64-9	D	42	4	1.50E-02	2.28E-01		3.10E+03 NC	7.3E-05
A004	SVOC	2,4-Dimethylphenol	105-67-9		42	6	1.82E-01	6.10E+00		1.20E+04 NC	5.1E-04
A004	SVOC	Di-n-butylphthalate	84-74-2	D	42	9	2.20E-01	5.10E+01		6.20E+04 NC	8.2E-04
A004	SVOC	Di-n-octylphthalate	117-84-0		42	4	1.80E-01	2.90E+01		2.50E+04 NC	1.2E-03
A004	SVOC	Fluoranthene	206-44-0	D	42	20	2.10E-02	4.40E+00		2.20E+04 NC	2.0E-04
A004	SVOC	Fluorene	86-73-7	D	42	8	1.80E-02	1.80E+00		2.60E+04 NC	6.9E-05
A004	SVOC	Hexachlorobenzene	118-74-1	B2	42	1	6.90E-02	6.90E-02		1.10E+01 C	6.3E-03
A004	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	42	11	1.50E-02	3.50E-01		2.10E+01 C	1.7E-02
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	42	16	3.70E-02	2.80E+00		1.90E+02 NC	1.5E-02

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A004	SVOC	Methylphenol (total)	1319-77-3		42	5	2.33E-02	4.95E-01		3.10E+03 NC	1.6E-04
A004	SVOC	Naphthalene	91-20-3	C	42	8	2.70E-02	9.50E-01		1.90E+02 NC	5.0E-03
A004	SVOC	4-Nitroaniline	100-01-6	C	42	1	3.50E-01	3.50E-01			
A004	SVOC	Phenanthrene	85-01-8	D	42	18	5.80E-02	4.20E+00		2.90E+04 NC	1.4E-04
A004	SVOC	Phenol	108-95-2	ID	42	14	1.40E-01	1.85E+01		3.70E+05 NC	5.0E-05
A004	SVOC	Pyrene	129-00-0	D	42	20	2.70E-02	1.60E+00		2.90E+04 NC	5.5E-05
A004	P/PCB	PCBs (total)	1336-36-3	B2	42	42	6.63E-02	1.34E+03		7.40E+00 C	1.8E+02
A004	INORG	Aluminum	7429-90-5	D	42	42	1.35E+03	8.57E+04	1.48E+04	9.20E+05 NC	7.7E-02
A004	INORG	Antimony	7440-36-0		33	6	3.30E-01	8.40E-01	4.40E-01	4.10E+02 NC	9.7E-04
A004	INORG	Arsenic	7440-38-2	A	42	42	7.05E-01	2.28E+01	1.13E+01	1.60E+01 C	7.2E-01
A004	INORG	Barium	7440-39-3	D	42	42	3.05E+00	3.79E+02	8.38E+01	6.70E+04 NC	4.4E-03
A004	INORG	Beryllium	7440-41-7	B1	42	9	3.40E-01	1.90E+00	5.70E-01	1.90E+03 NC	7.0E-04
A004	INORG	Cadmium	7440-43-9	B1	42	33	3.50E-02	2.30E+00	5.52E-01	4.50E+02 NC	3.9E-03
A004	INORG	Chromium (total)	7440-47-3		42	42	9.40E+00	4.41E+02	2.82E+01	2.50E+03 NC	1.7E-01
A004	INORG	Cobalt	7440-48-4	B1	42	42	4.30E+00	1.50E+03	1.00E+01	1.30E+04 NC	1.1E-01
A004	INORG	Copper	7440-50-8	D	42	42	1.51E+01	3.55E+03	1.89E+01	4.10E+04 NC	8.6E-02
A004	INORG	Cyanide (amenable)	57-12-5A		42	2	1.48E-01	3.30E-01		1.20E+04 NC	2.8E-05
A004	INORG	Cyanide (total)	57-12-5	D	42	5	1.48E-01	3.30E-01		1.20E+04 NC	2.8E-05
A004	INORG	Iron	7439-89-6	D	42	42	2.00E+03	7.37E+04	2.44E+04	3.10E+05 NC	1.6E-01
A004	INORG	Lead	7439-92-1	B2	42	42	9.90E+00	2.02E+03	2.00E+01	7.50E+02 NC	2.7E+00
A004	INORG	Manganese	7439-96-5	D	42	42	2.39E+01	7.57E+02	6.76E+02	1.90E+04 NC	4.2E-03
A004	INORG	Mercury	7439-97-6	D	42	41	1.30E-02	1.34E+02	7.05E-02	1.36E+01 NC	9.8E+00
A004	INORG	Nickel	7440-02-0	A	42	42	1.61E+01	9.84E+02	1.83E+01	2.00E+04 NC	4.8E-02
A004	INORG	Selenium	7782-49-2	D	42	5	4.10E-01	1.20E+00	3.96E-01	5.10E+03 NC	1.6E-04
A004	INORG	Silver	7440-22-4	D	42	16	1.80E-01	2.90E+00		5.10E+03 NC	5.7E-04
A004	INORG	Thallium	7440-28-0		42	19	3.03E-01	5.60E+00	8.40E-01	6.80E+01 NC	7.0E-02
A004	INORG	Vanadium	7440-62-2		42	42	1.20E+00	6.07E+01	4.18E+01	7.20E+03 NC	2.6E-03
A004	INORG	Zinc	7440-66-6	D	42	42	1.55E+01	8.29E+02	5.48E+01	3.10E+05 NC	2.5E-03
A005	VOC	Acetone	67-64-1	ID	36	6	8.50E-03	1.90E-01		6.00E+03 NC	3.2E-05
A005	VOC	Benzene	71-43-2	A	36	1	1.20E-03	1.20E-03		1.30E+01 C	9.2E-05
A005	VOC	2-Butanone	78-93-3	ID	36	7	1.70E-03	2.50E-02		2.70E+04 NC	9.3E-07
A005	VOC	Carbon Disulfide	75-15-0		36	2	1.00E-03	2.50E-03		1.20E+03 NC	2.1E-06
A005	VOC	Chlorobenzene	108-90-7	D	36	5	5.00E-04	2.00E+00		5.30E+02 NC	3.8E-03
A005	VOC	Cumene	98-82-8	D	36	5	2.90E-03	9.00E-02		2.00E+03 NC	4.5E-05
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	35	5	9.80E-04	1.20E+00		4.10E+03 NC	2.9E-04
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	35	6	8.00E-03	2.00E+01		6.30E+01 NC	3.2E-01
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	35	7	1.40E-03	5.40E+01		7.90E+01 C	6.8E-01
A005	VOC	Dichlorodifluoromethane	75-71-8		36	1	5.80E-02	5.80E-02		3.10E+02 NC	1.9E-04
A005	VOC	1,2-Dichloroethane	107-06-2	B2	36	1	1.30E-02	1.30E-02		6.00E+00 C	2.2E-03

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A005	VOC	cis-1,2-Dichloroethene	156-59-2	D	36	2	1.60E-03	1.60E-03		1.50E+02 NC	1.1E-05
A005	VOC	Ethyl Benzene	100-41-4	D	36	2	4.40E-03	4.30E-02		7.40E+03 NC	5.8E-06
A005	VOC	Methyl Acetate	79-20-9		35	4	1.90E-03	2.00E-01		9.20E+04 NC	2.2E-06
A005	VOC	Methylcyclohexane	108-87-2		35	3	1.20E-03	2.90E-02		8.70E+03 NC	3.3E-06
A005	VOC	Methylene Chloride	75-09-2	B2	36	6	2.50E-03	1.60E-02		2.10E+02 C	7.6E-05
A005	VOC	Tetrachloroethene	127-18-4	C-B2	36	2	5.80E-03	8.10E-03		3.40E+01 C	2.4E-04
A005	VOC	Toluene	108-88-3	D	36	3	1.10E-03	1.40E-01		2.20E+03 NC	6.4E-05
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	35	6	4.20E-03	3.00E-01		5.60E+03 NC	5.4E-05
A005	VOC	Xylenes (total)	1330-20-7	ID	36	4	3.00E-03	1.90E-01		9.00E+02 NC	2.1E-04
A005	SVOC	Acenaphthene	83-32-9		36	1	2.41E-02	2.41E-02		2.90E+04 NC	8.3E-07
A005	SVOC	Anthracene	120-12-7	D	36	1	4.08E-02	4.08E-02		2.40E+05 NC	1.7E-07
A005	SVOC	Benzaldehyde	100-52-7		36	2	2.75E-02	2.70E-01		6.20E+04 NC	4.4E-06
A005	SVOC	Benzo(a)anthracene	56-55-3	B2	36	6	6.10E-02	7.90E-01		2.10E+01 C	3.8E-02
A005	SVOC	Benzo(a)pyrene	50-32-8	B2	36	2	3.51E-01	7.40E-01		2.10E+00 C	3.5E-01
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	36	4	9.90E-02	7.80E-01		2.10E+01 C	3.7E-02
A005	SVOC	Benzo(g,h,i)perylene	191-24-2	D	36	1	2.39E-01	2.39E-01		2.90E+04 NC	8.2E-06
A005	SVOC	Benzo(k)fluoranthene	207-08-9	B2	36	1	4.30E-01	4.30E-01		2.10E+02 C	2.0E-03
A005	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	36	6	4.80E-02	9.90E+00		1.20E+03 C	8.3E-03
A005	SVOC	Caprolactam	105-60-2		36	1	2.20E-02	2.20E-02		3.10E+05 NC	7.1E-08
A005	SVOC	Carbazole	86-74-8	B2	36	1	6.05E-02	6.05E-02		8.60E+02 C	7.0E-05
A005	SVOC	Chrysene	218-01-9	B2	36	7	6.80E-02	1.00E+00		2.10E+03 C	4.8E-04
A005	SVOC	Dibenzofuran	132-64-9	D	36	1	2.15E-02	2.15E-02		3.10E+03 NC	6.9E-06
A005	SVOC	2,4-Dimethylphenol	105-67-9		36	3	7.30E-01	1.50E+02		1.20E+04 NC	1.3E-02
A005	SVOC	Di-n-octylphthalate	117-84-0		36	8	4.70E-02	9.50E+00		2.50E+04 NC	3.8E-04
A005	SVOC	Fluoranthene	206-44-0	D	36	6	7.70E-02	1.20E+00		2.20E+04 NC	5.5E-05
A005	SVOC	Fluorene	86-73-7	D	36	1	2.81E-02	2.81E-02		2.60E+04 NC	1.1E-06
A005	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	36	1	1.87E-01	1.87E-01		2.10E+01 C	8.9E-03
A005	SVOC	2-Methylnaphthalene	91-57-6	ID	36	4	1.30E-01	6.40E-01		1.90E+02 NC	3.4E-03
A005	SVOC	Methylphenol (total)	1319-77-3		36	2	1.71E-01	2.70E-01		3.10E+03 NC	8.7E-05
A005	SVOC	Naphthalene	91-20-3	C	36	2	9.30E-02	7.60E-01		1.90E+02 NC	4.0E-03
A005	SVOC	Phenanthrene	85-01-8	D	36	5	2.50E-02	3.66E-01		2.90E+04 NC	1.3E-05
A005	SVOC	Phenol	108-95-2	ID	36	6	1.08E-01	7.50E+00		3.70E+05 NC	2.0E-05
A005	SVOC	Pyrene	129-00-0	D	36	8	6.10E-02	1.20E+00		2.90E+04 NC	4.1E-05
A005	P/PCB	PCBs (total)	1336-36-3	B2	36	29	3.35E-02	9.68E+03		7.40E+00 C	1.3E+03
A005	INORG	Aluminum	7429-90-5	D	36	36	1.20E+03	1.80E+04	1.48E+04	9.20E+05 NC	3.5E-03
A005	INORG	Antimony	7440-36-0		34	11	3.80E-01	5.90E+00	4.40E-01	4.10E+02 NC	1.3E-02
A005	INORG	Arsenic	7440-38-2	A	36	36	4.70E-01	1.29E+01	1.13E+01	1.60E+01 C	1.0E-01
A005	INORG	Barium	7440-39-3	D	36	36	1.10E+00	1.06E+02	8.38E+01	6.70E+04 NC	3.3E-04
A005	INORG	Beryllium	7440-41-7	B1	36	18	1.80E-01	3.40E+00	5.70E-01	1.90E+03 NC	1.5E-03

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A005	INORG	Cadmium	7440-43-9	B1	36	26	1.18E-01	1.60E+00	5.52E-01	4.50E+02 NC	2.3E-03
A005	INORG	Chromium (total)	7440-47-3		36	36	3.80E+00	1.60E+02	2.82E+01	2.50E+03 NC	5.3E-02
A005	INORG	Cobalt	7440-48-4	B1	36	36	8.40E-01	3.73E+01	1.00E+01	1.30E+04 NC	2.1E-03
A005	INORG	Copper	7440-50-8	D	36	36	4.90E+00	7.86E+02	1.89E+01	4.10E+04 NC	1.9E-02
A005	INORG	Iron	7439-89-6	D	36	36	2.52E+03	4.86E+04	2.44E+04	3.10E+05 NC	7.8E-02
A005	INORG	Lead	7439-92-1	B2	36	36	4.60E+00	1.25E+02	2.00E+01	7.50E+02 NC	1.4E-01
A005	INORG	Manganese	7439-96-5	D	36	36	2.71E+01	8.85E+02	6.76E+02	1.90E+04 NC	1.1E-02
A005	INORG	Mercury	7439-97-6	D	36	31	1.30E-02	7.90E-01	7.05E-02	1.36E+01 NC	5.3E-02
A005	INORG	Nickel	7440-02-0	A	36	36	2.20E+00	3.60E+02	1.83E+01	2.00E+04 NC	1.7E-02
A005	INORG	Selenium	7782-49-2	D	36	7	4.50E-01	7.30E-01	3.96E-01	5.10E+03 NC	6.6E-05
A005	INORG	Silver	7440-22-4	D	36	4	1.40E-01	1.80E+00		5.10E+03 NC	3.5E-04
A005	INORG	Thallium	7440-28-0		36	6	7.20E-01	3.30E+00	8.40E-01	6.80E+01 NC	3.6E-02
A005	INORG	Vanadium	7440-62-2		36	36	2.10E+00	5.71E+01	4.18E+01	7.20E+03 NC	2.1E-03
A005	INORG	Zinc	7440-66-6	D	36	36	8.80E+00	1.54E+02	5.48E+01	3.10E+05 NC	3.2E-04
A006	VOC	Acetone	67-64-1	ID	57	2	6.80E-03	1.40E-02		6.00E+03 NC	2.3E-06
A006	VOC	Bromomethane	74-83-9	D	57	1	5.00E-01	5.00E-01		1.30E+01 NC	3.8E-02
A006	VOC	2-Butanone	78-93-3	ID	57	7	3.40E-03	2.50E-01		2.70E+04 NC	9.3E-06
A006	VOC	Chlorobenzene	108-90-7	D	57	10	7.70E-04	1.80E+00		5.30E+02 NC	3.4E-03
A006	VOC	Cumene	98-82-8	D	57	6	1.30E-03	7.80E-01		2.00E+03 NC	3.9E-04
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	57	11	8.90E-04	3.60E+00		4.10E+03 NC	8.8E-04
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	57	17	9.90E-04	3.20E+01		6.30E+01 NC	5.1E-01
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	57	19	3.10E-04	8.40E+01		7.90E+01 C	1.1E+00
A006	VOC	Ethyl Benzene	100-41-4	D	57	2	4.00E-02	6.20E-02		7.40E+03 NC	8.4E-06
A006	VOC	Methyl Acetate	79-20-9		57	6	1.40E-03	2.00E-01		9.20E+04 NC	2.2E-06
A006	VOC	Methylcyclohexane	108-87-2		57	1	1.20E-01	1.20E-01		8.70E+03 NC	1.4E-05
A006	VOC	Methylene Chloride	75-09-2	B2	57	8	1.60E-03	1.40E-02		2.10E+02 C	6.7E-05
A006	VOC	Toluene	108-88-3	D	57	5	2.80E-03	7.30E-01		2.20E+03 NC	3.3E-04
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	57	6	1.90E-02	7.80E-01		5.60E+03 NC	1.4E-04
A006	VOC	Xylenes (total)	1330-20-7	ID	57	4	2.70E-03	3.00E-01		9.00E+02 NC	3.3E-04
A006	SVOC	Acenaphthene	83-32-9		57	6	2.00E-02	9.70E+00		2.90E+04 NC	3.3E-04
A006	SVOC	Acenaphthylene	208-96-8	D	57	1	8.70E-02	8.70E-02		2.90E+04 NC	3.0E-06
A006	SVOC	Anthracene	120-12-7	D	57	2	1.10E-01	1.10E-01		2.40E+05 NC	4.6E-07
A006	SVOC	Benzaldehyde	100-52-7		57	5	2.70E-02	1.30E-01		6.20E+04 NC	2.1E-06
A006	SVOC	Benzo(a)anthracene	56-55-3	B2	57	3	3.90E-02	4.10E-01		2.10E+01 C	2.0E-02
A006	SVOC	Benzo(a)pyrene	50-32-8	B2	57	3	9.20E-02	6.40E-01		2.10E+00 C	3.0E-01
A006	SVOC	Benzo(b)fluoranthene	205-99-2	B2	57	3	1.50E-01	7.20E-01		2.10E+01 C	3.4E-02
A006	SVOC	Benzo(g,h,i)perylene	191-24-2	D	57	3	1.70E-01	7.20E-01		2.90E+04 NC	2.5E-05
A006	SVOC	Benzo(k)fluoranthene	207-08-9	B2	57	1	3.60E-01	3.60E-01		2.10E+02 C	1.7E-03
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	57	16	2.10E-02	1.50E+02		1.20E+03 C	1.3E-01

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A006	SVOC	Butylbenzylphthalate	85-68-7	C	57	1	4.70E+00	4.70E+00		1.20E+05 NC	3.9E-05
A006	SVOC	Caprolactam	105-60-2		57	5	1.09E-02	2.50E-02		3.10E+05 NC	8.1E-08
A006	SVOC	Carbazole	86-74-8	B2	57	2	3.80E-02	8.40E-02		8.60E+02 C	9.8E-05
A006	SVOC	Chrysene	218-01-9	B2	57	4	2.30E-02	6.80E-01		2.10E+03 C	3.2E-04
A006	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	57	1	1.00E-01	1.00E-01		2.10E+00 C	4.8E-02
A006	SVOC	Dibenzofuran	132-64-9	D	57	1	3.10E-02	3.10E-02		3.10E+03 NC	1.0E-05
A006	SVOC	2,4-Dimethylphenol	105-67-9		57	4	3.70E+00	1.30E+01		1.20E+04 NC	1.1E-03
A006	SVOC	Di-n-butylphthalate	84-74-2	D	57	2	3.05E-01	3.50E-01		6.20E+04 NC	5.6E-06
A006	SVOC	Di-n-octylphthalate	117-84-0		57	14	2.90E-02	1.70E+02		2.50E+04 NC	6.8E-03
A006	SVOC	Fluoranthene	206-44-0	D	57	7	4.60E-02	1.10E+00		2.20E+04 NC	5.0E-05
A006	SVOC	Fluorene	86-73-7	D	57	2	2.70E-02	4.70E-02		2.60E+04 NC	1.8E-06
A006	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	57	3	1.30E-01	5.10E-01		2.10E+01 C	2.4E-02
A006	SVOC	2-Methylnaphthalene	91-57-6	ID	57	4	2.90E-02	1.00E+00		1.90E+02 NC	5.3E-03
A006	SVOC	Naphthalene	91-20-3	C	57	5	3.00E-02	2.10E+00		1.90E+02 NC	1.1E-02
A006	SVOC	Phenanthrene	85-01-8	D	57	6	2.30E-02	6.70E-01		2.90E+04 NC	2.3E-05
A006	SVOC	Phenol	108-95-2	ID	57	3	7.16E-01	6.60E+00		3.70E+05 NC	1.8E-05
A006	SVOC	Pyrene	129-00-0	D	57	7	3.50E-02	9.10E-01		2.90E+04 NC	3.1E-05
A006	P/PCB	PCBs (total)	1336-36-3	B2	61	46	3.36E-02	2.38E+04		7.40E+00 C	3.2E+03
A006	INORG	Aluminum	7429-90-5	D	57	57	2.80E+03	2.00E+04	1.48E+04	9.20E+05 NC	5.6E-03
A006	INORG	Antimony	7440-36-0		41	9	3.30E-01	7.90E-01	4.40E-01	4.10E+02 NC	8.5E-04
A006	INORG	Arsenic	7440-38-2	A	57	57	1.20E+00	3.70E+01	1.13E+01	1.60E+01 C	1.6E+00
A006	INORG	Barium	7440-39-3	D	57	57	8.95E+00	5.33E+02	8.38E+01	6.70E+04 NC	6.7E-03
A006	INORG	Beryllium	7440-41-7	B1	57	43	1.70E-01	7.80E+00	5.70E-01	1.90E+03 NC	3.8E-03
A006	INORG	Cadmium	7440-43-9	B1	57	37	9.20E-02	1.54E+01	5.52E-01	4.50E+02 NC	3.3E-02
A006	INORG	Chromium (total)	7440-47-3		57	57	5.90E+00	9.43E+01	2.82E+01	2.50E+03 NC	2.6E-02
A006	INORG	Cobalt	7440-48-4	B1	57	57	1.90E+00	3.07E+02	1.00E+01	1.30E+04 NC	2.3E-02
A006	INORG	Copper	7440-50-8	D	57	57	8.80E+00	6.33E+02	1.89E+01	4.10E+04 NC	1.5E-02
A006	INORG	Cyanide (total)	57-12-5	D	57	4	2.40E-01	7.90E-01		1.20E+04 NC	6.6E-05
A006	INORG	Iron	7439-89-6	D	57	57	4.87E+03	3.98E+04	2.44E+04	3.10E+05 NC	5.0E-02
A006	INORG	Lead	7439-92-1	B2	57	57	4.85E+00	1.07E+02	2.00E+01	7.50E+02 NC	1.2E-01
A006	INORG	Manganese	7439-96-5	D	57	57	1.59E+01	3.39E+03	6.76E+02	1.90E+04 NC	1.4E-01
A006	INORG	Mercury	7439-97-6	D	57	55	1.50E-02	2.25E+00	7.05E-02	1.36E+01 NC	1.6E-01
A006	INORG	Nickel	7440-02-0	A	57	57	4.10E+00	1.49E+02	1.83E+01	2.00E+04 NC	6.5E-03
A006	INORG	Selenium	7782-49-2	D	57	15	3.50E-01	1.45E+00	3.96E-01	5.10E+03 NC	2.1E-04
A006	INORG	Silver	7440-22-4	D	57	2	4.30E-01	8.10E-01		5.10E+03 NC	1.6E-04
A006	INORG	Thallium	7440-28-0		57	25	3.38E-01	4.00E+00	8.40E-01	6.80E+01 NC	4.6E-02
A006	INORG	Vanadium	7440-62-2		57	57	3.50E+00	6.88E+01	4.18E+01	7.20E+03 NC	3.7E-03
A006	INORG	Zinc	7440-66-6	D	57	57	1.12E+01	1.06E+03	5.48E+01	3.10E+05 NC	3.2E-03
A007	VOC	Acetone	67-64-1	ID	8	2	3.30E-03	2.60E-02		6.00E+03 NC	4.3E-06

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A007	VOC	2-Butanone	78-93-3	ID	8	2	3.00E-03	5.80E-03		2.70E+04 NC	2.1E-07
A007	VOC	1,4-Dichlorobenzene	106-46-7	C	8	1	1.00E-03	1.00E-03		7.90E+01 C	1.3E-05
A007	VOC	cis-1,2-Dichloroethene	156-59-2	D	8	1	1.70E-03	1.70E-03		1.50E+02 NC	1.1E-05
A007	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	2	3.90E-02	2.00E-01		1.20E+03 C	1.7E-04
A007	P/PCB	PCBs (total)	1336-36-3	B2	8	1	6.66E-02	6.66E-02		7.40E+00 C	9.0E-03
A007	INORG	Aluminum	7429-90-5	D	8	8	9.05E+03	1.98E+04	1.48E+04	9.20E+05 NC	5.4E-03
A007	INORG	Antimony	7440-36-0		8	2	4.30E-01	5.10E-01	4.40E-01	4.10E+02 NC	1.7E-04
A007	INORG	Arsenic	7440-38-2	A	8	8	7.50E+00	1.57E+01	1.13E+01	1.60E+01 C	2.8E-01
A007	INORG	Barium	7440-39-3	D	8	8	4.72E+01	8.77E+01	8.38E+01	6.70E+04 NC	5.8E-05
A007	INORG	Beryllium	7440-41-7	B1	8	6	1.10E+00	2.40E+00	5.70E-01	1.90E+03 NC	9.6E-04
A007	INORG	Chromium (total)	7440-47-3		8	8	9.80E+00	3.47E+01	2.82E+01	2.50E+03 NC	2.6E-03
A007	INORG	Cobalt	7440-48-4	B1	8	8	8.40E+00	2.98E+01	1.00E+01	1.30E+04 NC	1.5E-03
A007	INORG	Copper	7440-50-8	D	8	8	9.10E+00	2.40E+01	1.89E+01	4.10E+04 NC	1.2E-04
A007	INORG	Iron	7439-89-6	D	8	8	1.92E+04	3.44E+04	2.44E+04	3.10E+05 NC	3.2E-02
A007	INORG	Lead	7439-92-1	B2	8	8	1.48E+01	4.12E+01	2.00E+01	7.50E+02 NC	2.8E-02
A007	INORG	Manganese	7439-96-5	D	8	8	1.20E+02	4.25E+02	6.76E+02	1.90E+04 NC	
A007	INORG	Mercury	7439-97-6	D	8	4	6.40E-02	1.10E-01	7.05E-02	1.36E+01 NC	2.9E-03
A007	INORG	Nickel	7440-02-0	A	8	8	1.38E+01	4.81E+01	1.83E+01	2.00E+04 NC	1.5E-03
A007	INORG	Vanadium	7440-62-2		8	8	1.03E+01	4.95E+01	4.18E+01	7.20E+03 NC	1.1E-03
A007	INORG	Zinc	7440-66-6	D	8	8	3.57E+01	6.26E+01	5.48E+01	3.10E+05 NC	2.5E-05
A008	VOC	2-Butanone	78-93-3	ID	27	8	1.70E-03	5.30E-03		2.70E+04 NC	2.0E-07
A008	VOC	Chlorobenzene	108-90-7	D	27	2	1.30E-01	9.00E+00		5.30E+02 NC	1.7E-02
A008	VOC	1,2-Dichlorobenzene	95-50-1	D	27	1	7.90E-01	7.90E-01		4.10E+03 NC	1.9E-04
A008	VOC	1,3-Dichlorobenzene	541-73-1	D	27	2	1.40E-02	6.50E+00		6.30E+01 NC	1.0E-01
A008	VOC	1,4-Dichlorobenzene	106-46-7	C	27	2	2.30E-02	3.40E+01		7.90E+01 C	4.3E-01
A008	VOC	Methylene Chloride	75-09-2	B2	27	7	1.10E-03	2.90E-03		2.10E+02 C	1.4E-05
A008	SVOC	Anthracene	120-12-7	D	27	3	2.80E-02	1.70E-01		2.40E+05 NC	7.1E-07
A008	SVOC	Benzo(a)anthracene	56-55-3	B2	27	2	2.70E-02	5.50E-02		2.10E+01 C	2.6E-03
A008	SVOC	Benzo(a)pyrene	50-32-8	B2	27	1	2.00E-02	2.00E-02		2.10E+00 C	9.5E-03
A008	SVOC	Benzo(b)fluoranthene	205-99-2	B2	27	2	2.90E-02	6.20E-02		2.10E+01 C	3.0E-03
A008	SVOC	Benzo(g,h,i)perylene	191-24-2	D	27	1	1.60E-02	1.60E-02		2.90E+04 NC	5.5E-07
A008	SVOC	Biphenyl	92-52-4	D	27	1	4.60E-02	4.60E-02		2.30E+04 NC	2.0E-06
A008	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	27	4	4.00E-02	4.50E+00		1.20E+03 C	3.8E-03
A008	SVOC	Carbazole	86-74-8	B2	27	1	6.40E-02	6.40E-02		8.60E+02 C	7.4E-05
A008	SVOC	Chrysene	218-01-9	B2	27	1	2.40E-02	2.40E-02		2.10E+03 C	1.1E-05
A008	SVOC	Dibenzofuran	132-64-9	D	27	2	2.00E-02	6.20E-02		3.10E+03 NC	2.0E-05
A008	SVOC	2,4-Dimethylphenol	105-67-9		27	1	6.70E-02	6.70E-02		1.20E+04 NC	5.6E-06
A008	SVOC	Di-n-octylphthalate	117-84-0		27	2	3.60E+00	3.60E+00		2.50E+04 NC	1.4E-04
A008	SVOC	Fluoranthene	206-44-0	D	27	3	3.60E-02	9.60E-02		2.20E+04 NC	4.4E-06

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A008	SVOC	Fluorene	86-73-7	D	27	2	3.80E-02	4.30E-02		2.60E+04 NC	1.7E-06
A008	SVOC	2-Methylnaphthalene	91-57-6	ID	27	1	9.30E-02	9.30E-02		1.90E+02 NC	4.9E-04
A008	SVOC	Naphthalene	91-20-3	C	27	1	2.40E-02	2.40E-02		1.90E+02 NC	1.3E-04
A008	SVOC	Phenanthrene	85-01-8	D	27	3	5.20E-02	1.70E-01		2.90E+04 NC	5.9E-06
A008	SVOC	Phenol	108-95-2	ID	27	1	4.70E-01	4.70E-01		3.70E+05 NC	1.3E-06
A008	SVOC	Pyrene	129-00-0	D	27	3	2.50E-02	6.40E-02		2.90E+04 NC	2.2E-06
A008	P/PCB	PCBs (total)	1336-36-3	B2	27	15	4.97E-02	1.89E+03		7.40E+00 C	2.6E+02
A008	INORG	Aluminum	7429-90-5	D	27	27	1.21E+03	1.77E+04	1.48E+04	9.20E+05 NC	3.1E-03
A008	INORG	Antimony	7440-36-0		27	3	3.30E-01	1.30E+00	4.40E-01	4.10E+02 NC	2.1E-03
A008	INORG	Arsenic	7440-38-2	A	27	27	6.10E-01	2.73E+01	1.13E+01	1.60E+01 C	1.0E+00
A008	INORG	Barium	7440-39-3	D	27	27	3.06E+01	3.00E+02	8.38E+01	6.70E+04 NC	3.2E-03
A008	INORG	Beryllium	7440-41-7	B1	27	22	1.20E-01	6.70E+00	5.70E-01	1.90E+03 NC	3.2E-03
A008	INORG	Cadmium	7440-43-9	B1	27	18	1.90E-01	2.20E+00	5.52E-01	4.50E+02 NC	3.7E-03
A008	INORG	Chromium (total)	7440-47-3		27	27	3.30E+00	3.97E+01	2.82E+01	2.50E+03 NC	4.6E-03
A008	INORG	Cobalt	7440-48-4	B1	27	27	8.30E-01	8.56E+01	1.00E+01	1.30E+04 NC	5.8E-03
A008	INORG	Copper	7440-50-8	D	27	26	1.60E+00	4.44E+01	1.89E+01	4.10E+04 NC	6.2E-04
A008	INORG	Cyanide (total)	57-12-5	D	27	2	1.10E-01	1.50E-01		1.20E+04 NC	1.3E-05
A008	INORG	Iron	7439-89-6	D	27	27	2.46E+03	3.79E+04	2.44E+04	3.10E+05 NC	4.4E-02
A008	INORG	Lead	7439-92-1	B2	27	27	1.50E+00	5.01E+01	2.00E+01	7.50E+02 NC	4.0E-02
A008	INORG	Manganese	7439-96-5	D	27	27	6.46E+01	2.90E+03	6.76E+02	1.90E+04 NC	1.2E-01
A008	INORG	Mercury	7439-97-6	D	27	20	2.30E-02	1.30E-01	7.05E-02	1.36E+01 NC	4.4E-03
A008	INORG	Nickel	7440-02-0	A	27	27	4.40E+00	1.28E+02	1.83E+01	2.00E+04 NC	5.5E-03
A008	INORG	Selenium	7782-49-2	D	27	6	5.80E-01	1.10E+00	3.96E-01	5.10E+03 NC	1.4E-04
A008	INORG	Thallium	7440-28-0		27	6	6.60E-01	3.80E+00	8.40E-01	6.80E+01 NC	4.4E-02
A008	INORG	Vanadium	7440-62-2		27	27	2.50E+00	5.32E+01	4.18E+01	7.20E+03 NC	1.6E-03
A008	INORG	Zinc	7440-66-6	D	27	27	2.19E+01	1.19E+02	5.48E+01	3.10E+05 NC	2.1E-04
A009	VOC	Acetone	67-64-1	ID	20	3	2.85E-03	4.60E-02		6.00E+03 NC	7.7E-06
A009	VOC	2-Butanone	78-93-3	ID	20	2	2.80E-03	1.30E-02		2.70E+04 NC	4.8E-07
A009	VOC	Chlorobenzene	108-90-7	D	20	2	1.70E-02	3.30E-02		5.30E+02 NC	6.2E-05
A009	VOC	Cumene	98-82-8	D	20	2	8.25E-04	1.20E-02		2.00E+03 NC	6.0E-06
A009	VOC	1,2-Dichlorobenzene	95-50-1	D	20	1	6.65E-03	6.65E-03		4.10E+03 NC	1.6E-06
A009	VOC	1,3-Dichlorobenzene	541-73-1	D	20	2	1.75E-02	2.30E-01		6.30E+01 NC	3.7E-03
A009	VOC	1,4-Dichlorobenzene	106-46-7	C	20	4	2.30E-03	6.70E-01		7.90E+01 C	8.5E-03
A009	VOC	4-Methyl-2-pentanone	108-10-1	ID	20	1	1.55E-03	1.55E-03		2.80E+03 NC	5.5E-07
A009	VOC	Methylene Chloride	75-09-2	B2	20	3	2.60E-03	3.80E-03		2.10E+02 C	1.8E-05
A009	VOC	Toluene	108-88-3	D	20	1	4.50E-04	4.50E-04		2.20E+03 NC	2.0E-07
A009	SVOC	Anthracene	120-12-7	D	20	1	3.90E-02	3.90E-02		2.40E+05 NC	1.6E-07
A009	SVOC	Benzo(a)anthracene	56-55-3	B2	20	1	2.00E-01	2.00E-01		2.10E+01 C	9.5E-03
A009	SVOC	Benzo(a)pyrene	50-32-8	B2	20	1	2.10E-01	2.10E-01		2.10E+00 C	1.0E-01

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A009	SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	2	4.60E-02	3.10E-01		2.10E+01 C	1.5E-02
A009	SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	2	6.40E-02	1.50E-01		2.90E+04 NC	5.2E-06
A009	SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	1	1.20E-01	1.20E-01		2.10E+02 C	5.7E-04
A009	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	3	2.70E-01	1.50E+00		1.20E+03 C	1.3E-03
A009	SVOC	Chrysene	218-01-9	B2	20	2	3.90E-02	2.00E-01		2.10E+03 C	9.5E-05
A009	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	1	4.00E-02	4.00E-02		2.10E+00 C	1.9E-02
A009	SVOC	Di-n-octylphthalate	117-84-0		20	3	3.30E-01	2.30E+00		2.50E+04 NC	9.2E-05
A009	SVOC	Fluoranthene	206-44-0	D	20	2	6.30E-02	3.50E-01		2.20E+04 NC	1.6E-05
A009	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	1	1.30E-01	1.30E-01		2.10E+01 C	6.2E-03
A009	SVOC	Methylphenol (total)	1319-77-3		20	1	2.64E-01	2.64E-01		3.10E+03 NC	8.5E-05
A009	SVOC	Phenanthrene	85-01-8	D	20	1	1.80E-01	1.80E-01		2.90E+04 NC	6.2E-06
A009	SVOC	Phenol	108-95-2	ID	20	3	5.00E-02	3.70E+00		3.70E+05 NC	1.0E-05
A009	SVOC	Pyrene	129-00-0	D	20	2	8.20E-02	2.80E-01		2.90E+04 NC	9.7E-06
A009	P/PCB	PCBs (total)	1336-36-3	B2	20	13	6.14E-02	3.69E+03		7.40E+00 C	5.0E+02
A009	INORG	Aluminum	7429-90-5	D	20	20	1.33E+03	1.27E+04	1.48E+04	9.20E+05 NC	
A009	INORG	Antimony	7440-36-0		13	3	4.20E-01	1.60E+00	4.40E-01	4.10E+02 NC	2.8E-03
A009	INORG	Arsenic	7440-38-2	A	20	20	6.10E-01	1.84E+01	1.13E+01	1.60E+01 C	4.5E-01
A009	INORG	Barium	7440-39-3	D	20	20	1.09E+01	3.11E+03	8.38E+01	6.70E+04 NC	4.5E-02
A009	INORG	Beryllium	7440-41-7	B1	20	15	9.10E-02	7.70E+00	5.70E-01	1.90E+03 NC	3.8E-03
A009	INORG	Cadmium	7440-43-9	B1	20	18	3.40E-02	6.20E+00	5.52E-01	4.50E+02 NC	1.3E-02
A009	INORG	Chromium (total)	7440-47-3		20	20	4.30E+00	3.71E+01	2.82E+01	2.50E+03 NC	3.6E-03
A009	INORG	Cobalt	7440-48-4	B1	20	20	6.20E-01	6.94E+01	1.00E+01	1.30E+04 NC	4.6E-03
A009	INORG	Copper	7440-50-8	D	20	20	4.10E+00	2.20E+02	1.89E+01	4.10E+04 NC	4.9E-03
A009	INORG	Iron	7439-89-6	D	20	20	2.42E+03	4.41E+04	2.44E+04	3.10E+05 NC	6.4E-02
A009	INORG	Lead	7439-92-1	B2	20	20	2.50E+00	3.66E+01	2.00E+01	7.50E+02 NC	2.2E-02
A009	INORG	Manganese	7439-96-5	D	20	20	2.85E+01	1.48E+04	6.76E+02	1.90E+04 NC	7.4E-01
A009	INORG	Mercury	7439-97-6	D	20	12	8.68E-03	1.10E+00	7.05E-02	1.36E+01 NC	7.5E-02
A009	INORG	Nickel	7440-02-0	A	20	20	4.20E+00	1.20E+02	1.83E+01	2.00E+04 NC	5.1E-03
A009	INORG	Selenium	7782-49-2	D	20	5	4.80E-01	7.65E-01	3.96E-01	5.10E+03 NC	7.2E-05
A009	INORG	Thallium	7440-28-0		20	9	5.80E-01	5.20E+00	8.40E-01	6.80E+01 NC	6.4E-02
A009	INORG	Vanadium	7440-62-2		20	20	2.45E+00	5.81E+01	4.18E+01	7.20E+03 NC	2.3E-03
A009	INORG	Zinc	7440-66-6	D	20	20	8.10E+00	1.59E+02	5.48E+01	3.10E+05 NC	3.4E-04
A011	VOC	2-Butanone	78-93-3	ID	8	2	4.60E-03	6.30E-03		2.70E+04 NC	2.3E-07
A011	VOC	Chlorobenzene	108-90-7	D	8	2	1.10E-02	2.20E+00		5.30E+02 NC	4.2E-03
A011	VOC	Cumene	98-82-8	D	8	1	2.10E-02	2.10E-02		2.00E+03 NC	1.1E-05
A011	VOC	1,2-Dichlorobenzene	95-50-1	D	8	1	8.30E-02	8.30E-02		4.10E+03 NC	2.0E-05
A011	VOC	1,3-Dichlorobenzene	541-73-1	D	8	3	2.50E-03	8.90E-01		6.30E+01 NC	1.4E-02
A011	VOC	1,4-Dichlorobenzene	106-46-7	C	8	3	4.20E-03	1.70E+00		7.90E+01 C	2.2E-02
A011	VOC	Methyl Acetate	79-20-9		8	1	2.10E-03	2.10E-03		9.20E+04 NC	2.3E-08

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A011	VOC	Toluene	108-88-3	D	8	1	7.80E-04	7.80E-04		2.20E+03 NC	3.5E-07
A011	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	3	5.10E-01	5.10E+00		1.20E+03 C	4.3E-03
A011	SVOC	Diethylphthalate	84-66-2	D	8	1	1.80E-01	1.80E-01		4.90E+05 NC	3.7E-07
A011	SVOC	Di-n-octylphthalate	117-84-0		8	3	6.50E-01	6.00E+00		2.50E+04 NC	2.4E-04
A011	SVOC	Phenol	108-95-2	ID	8	1	2.30E-01	2.30E-01		3.70E+05 NC	6.2E-07
A011	P/PCB	PCBs (total)	1336-36-3	B2	8	6	1.33E+00	6.99E+02		7.40E+00 C	9.4E+01
A011	INORG	Aluminum	7429-90-5	D	8	8	1.17E+03	2.07E+04	1.48E+04	9.20E+05 NC	6.4E-03
A011	INORG	Antimony	7440-36-0		8	2	1.08E+01	1.12E+01	4.40E-01	4.10E+02 NC	2.6E-02
A011	INORG	Arsenic	7440-38-2	A	8	8	7.80E-01	4.42E+01	1.13E+01	1.60E+01 C	2.1E+00
A011	INORG	Barium	7440-39-3	D	8	8	2.15E+01	1.36E+02	8.38E+01	6.70E+04 NC	7.8E-04
A011	INORG	Beryllium	7440-41-7	B1	8	6	1.60E-01	1.30E+00	5.70E-01	1.90E+03 NC	3.8E-04
A011	INORG	Cadmium	7440-43-9	B1	8	6	2.00E-01	7.70E-01	5.52E-01	4.50E+02 NC	4.8E-04
A011	INORG	Chromium (total)	7440-47-3		8	8	4.20E+00	1.08E+03	2.82E+01	2.50E+03 NC	4.2E-01
A011	INORG	Cobalt	7440-48-4	B1	8	8	8.60E-01	5.61E+01	1.00E+01	1.30E+04 NC	3.5E-03
A011	INORG	Copper	7440-50-8	D	8	8	2.90E+00	1.96E+03	1.89E+01	4.10E+04 NC	4.7E-02
A011	INORG	Cyanide (total)	57-12-5	D	8	1	2.50E-01	2.50E-01		1.20E+04 NC	2.1E-05
A011	INORG	Iron	7439-89-6	D	8	8	2.89E+03	3.36E+05	2.44E+04	3.10E+05 NC	1.0E+00
A011	INORG	Lead	7439-92-1	B2	8	8	1.40E+00	1.91E+02	2.00E+01	7.50E+02 NC	2.3E-01
A011	INORG	Manganese	7439-96-5	D	8	8	1.11E+02	2.81E+03	6.76E+02	1.90E+04 NC	1.1E-01
A011	INORG	Mercury	7439-97-6	D	8	7	1.40E-02	3.10E-01	7.05E-02	1.36E+01 NC	1.8E-02
A011	INORG	Nickel	7440-02-0	A	8	8	5.20E+00	1.83E+03	1.83E+01	2.00E+04 NC	9.1E-02
A011	INORG	Selenium	7782-49-2	D	8	3	9.20E-01	3.70E+00	3.96E-01	5.10E+03 NC	6.5E-04
A011	INORG	Thallium	7440-28-0		8	3	7.70E-01	1.40E+00	8.40E-01	6.80E+01 NC	8.2E-03
A011	INORG	Vanadium	7440-62-2		8	8	2.60E+00	4.43E+01	4.18E+01	7.20E+03 NC	3.4E-04
A011	INORG	Zinc	7440-66-6	D	8	8	2.79E+01	4.45E+02	5.48E+01	3.10E+05 NC	1.3E-03
A014	P/PCB	PCBs (total)	1336-36-3	B2	2	1	1.40E-01	1.40E-01		7.40E+00 C	1.9E-02
A015	VOC	Benzene	71-43-2	A	5	1	3.10E-02	3.10E-02		1.30E+01 C	2.4E-03
A015	VOC	2-Butanone	78-93-3	ID	5	1	3.00E-03	3.00E-03		2.70E+04 NC	1.1E-07
A015	VOC	1,4-Dichlorobenzene	106-46-7	C	5	1	2.30E-02	2.30E-02		7.90E+01 C	2.9E-04
A015	VOC	cis-1,2-Dichloroethene	156-59-2	D	5	1	9.00E-01	9.00E-01		1.50E+02 NC	6.0E-03
A015	VOC	trans-1,2-Dichloroethene	156-60-5		5	1	1.10E-01	1.10E-01		2.30E+02 NC	4.8E-04
A015	VOC	Ethyl Benzene	100-41-4	D	5	1	1.90E-02	1.90E-02		7.40E+03 NC	2.6E-06
A015	VOC	Methylene Chloride	75-09-2	B2	5	3	4.60E-03	2.10E-02		2.10E+02 C	1.0E-04
A015	VOC	Tetrachloroethene	127-18-4	C-B2	5	1	9.20E-01	9.20E-01		3.40E+01 C	2.7E-02
A015	VOC	Toluene	108-88-3	D	5	1	2.20E-01	2.20E-01		2.20E+03 NC	1.0E-04
A015	VOC	Trichloroethene	79-01-6	C-B2	5	1	2.80E-01	2.80E-01		6.12E+01 C	4.6E-03
A015	VOC	Vinyl Chloride	75-01-4	A	5	2	6.90E-03	3.20E-01		7.50E+00 C	4.3E-02
A015	SVOC	Fluoranthene	206-44-0	D	5	1	1.60E-01	1.60E-01		2.20E+04 NC	7.3E-06
A015	SVOC	Phenanthrene	85-01-8	D	5	1	1.50E-01	1.50E-01		2.90E+04 NC	5.2E-06

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A015	SVOC	Pyrene	129-00-0	D	5	1	1.40E-01	1.40E-01		2.90E+04 NC	4.8E-06
A015	P/PCB	PCBs (total)	1336-36-3	B2	5	4	5.94E-02	9.82E+00		7.40E+00 C	1.3E+00
A015	INORG	Aluminum	7429-90-5	D	5	5	2.28E+03	2.14E+04	1.48E+04	9.20E+05 NC	7.2E-03
A015	INORG	Antimony	7440-36-0		5	2	1.40E+00	1.60E+00	4.40E-01	4.10E+02 NC	2.8E-03
A015	INORG	Arsenic	7440-38-2	A	5	5	2.10E+00	1.75E+01	1.13E+01	1.60E+01 C	3.9E-01
A015	INORG	Barium	7440-39-3	D	5	5	1.97E+01	1.42E+02	8.38E+01	6.70E+04 NC	8.7E-04
A015	INORG	Beryllium	7440-41-7	B1	5	3	7.00E-01	6.70E+00	5.70E-01	1.90E+03 NC	3.2E-03
A015	INORG	Cadmium	7440-43-9	B1	5	3	2.90E-01	8.20E-01	5.52E-01	4.50E+02 NC	5.9E-04
A015	INORG	Chromium (total)	7440-47-3		5	5	3.10E+00	1.09E+02	2.82E+01	2.50E+03 NC	3.2E-02
A015	INORG	Cobalt	7440-48-4	B1	5	5	5.60E+00	2.07E+01	1.00E+01	1.30E+04 NC	8.2E-04
A015	INORG	Copper	7440-50-8	D	5	5	5.70E+00	5.41E+02	1.89E+01	4.10E+04 NC	1.3E-02
A015	INORG	Iron	7439-89-6	D	5	5	6.51E+03	3.69E+04	2.44E+04	3.10E+05 NC	4.0E-02
A015	INORG	Lead	7439-92-1	B2	5	3	1.78E+01	1.60E+02	2.00E+01	7.50E+02 NC	1.9E-01
A015	INORG	Manganese	7439-96-5	D	5	5	2.36E+02	1.12E+03	6.76E+02	1.90E+04 NC	2.3E-02
A015	INORG	Mercury	7439-97-6	D	5	5	2.00E-02	5.00E+00	7.05E-02	1.36E+01 NC	3.6E-01
A015	INORG	Nickel	7440-02-0	A	5	5	1.05E+01	1.13E+03	1.83E+01	2.00E+04 NC	5.6E-02
A015	INORG	Selenium	7782-49-2	D	5	1	1.20E+00	1.20E+00	3.96E-01	5.10E+03 NC	1.6E-04
A015	INORG	Silver	7440-22-4	D	5	1	4.80E-01	4.80E-01		5.10E+03 NC	9.4E-05
A015	INORG	Thallium	7440-28-0		5	1	4.40E+00	4.40E+00	8.40E-01	6.80E+01 NC	5.2E-02
A015	INORG	Vanadium	7440-62-2		5	5	8.30E+00	5.39E+01	4.18E+01	7.20E+03 NC	1.7E-03
A015	INORG	Zinc	7440-66-6	D	5	5	1.03E+01	1.60E+02	5.48E+01	3.10E+05 NC	3.4E-04
A017	VOC	1,3-Dichlorobenzene	541-73-1	D	4	2	2.40E-03	1.60E-02		6.30E+01 NC	2.5E-04
A017	VOC	1,4-Dichlorobenzene	106-46-7	C	4	2	3.90E-03	2.70E-02		7.90E+01 C	3.4E-04
A017	VOC	cis-1,2-Dichloroethene	156-59-2	D	4	2	1.30E-03	6.20E-02		1.50E+02 NC	4.1E-04
A017	VOC	1,2,4-Trichlorobenzene	120-82-1	D	4	1	5.30E-03	5.30E-03		5.60E+03 NC	9.5E-07
A017	VOC	Trichloroethene	79-01-6	C-B2	4	1	1.70E-02	1.70E-02		6.12E+01 C	2.8E-04
A017	INORG	Aluminum	7429-90-5	D	4	4	3.75E+03	1.03E+04	1.48E+04	9.20E+05 NC	
A017	INORG	Antimony	7440-36-0		4	1	5.90E-01	5.90E-01	4.40E-01	4.10E+02 NC	3.7E-04
A017	INORG	Arsenic	7440-38-2	A	4	3	3.70E+00	1.04E+01	1.13E+01	1.60E+01 C	
A017	INORG	Barium	7440-39-3	D	4	4	2.00E+01	9.07E+01	8.38E+01	6.70E+04 NC	1.0E-04
A017	INORG	Beryllium	7440-41-7	B1	4	3	4.90E-01	2.70E+00	5.70E-01	1.90E+03 NC	1.1E-03
A017	INORG	Cadmium	7440-43-9	B1	4	2	1.10E+00	3.00E+00	5.52E-01	4.50E+02 NC	5.4E-03
A017	INORG	Chromium (total)	7440-47-3		4	4	5.60E+00	6.92E+01	2.82E+01	2.50E+03 NC	1.6E-02
A017	INORG	Cobalt	7440-48-4	B1	4	4	1.20E+00	1.48E+01	1.00E+01	1.30E+04 NC	3.7E-04
A017	INORG	Copper	7440-50-8	D	4	4	4.00E+00	2.69E+01	1.89E+01	4.10E+04 NC	1.9E-04
A017	INORG	Iron	7439-89-6	D	4	4	1.53E+03	2.68E+04	2.44E+04	3.10E+05 NC	7.8E-03
A017	INORG	Lead	7439-92-1	B2	4	4	4.10E+00	1.61E+01	2.00E+01	7.50E+02 NC	
A017	INORG	Manganese	7439-96-5	D	4	4	1.04E+01	7.13E+02	6.76E+02	1.90E+04 NC	1.9E-03
A017	INORG	Mercury	7439-97-6	D	4	4	2.10E-02	5.20E-02	7.05E-02	1.36E+01 NC	

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A017	INORG	Nickel	7440-02-0	A	4	4	3.40E+00	4.12E+01	1.83E+01	2.00E+04 NC	1.1E-03
A017	INORG	Selenium	7782-49-2	D	4	3	5.10E-01	8.30E-01	3.96E-01	5.10E+03 NC	8.5E-05
A017	INORG	Thallium	7440-28-0		4	2	7.80E-01	2.30E+00	8.40E-01	6.80E+01 NC	2.1E-02
A017	INORG	Vanadium	7440-62-2		4	4	5.10E+00	5.20E+01	4.18E+01	7.20E+03 NC	1.4E-03
A017	INORG	Zinc	7440-66-6	D	4	4	1.25E+01	4.43E+01	5.48E+01	3.10E+05 NC	
A018	VOC	Acetone	67-64-1	ID	6	5	1.10E-02	1.70E-02		6.00E+03 NC	2.8E-06
A018	SVOC	Anthracene	120-12-7	D	6	1	7.05E-02	7.05E-02		2.40E+05 NC	2.9E-07
A018	SVOC	Benzo(a)anthracene	56-55-3	B2	6	1	8.00E-02	8.00E-02		2.10E+01 C	3.8E-03
A018	SVOC	Benzo(a)pyrene	50-32-8	B2	6	3	2.40E-02	1.10E-01		2.10E+00 C	5.2E-02
A018	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	3	3.20E-02	1.20E-01		2.10E+01 C	5.7E-03
A018	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	1	7.00E-02	7.00E-02		2.90E+04 NC	2.4E-06
A018	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	2	3.50E-02	6.55E-02		2.10E+02 C	3.1E-04
A018	SVOC	Chrysene	218-01-9	B2	6	3	1.93E-02	1.00E-01		2.10E+03 C	4.8E-05
A018	SVOC	Di-n-butylphthalate	84-74-2	D	6	2	6.50E-02	9.55E-02		6.20E+04 NC	1.5E-06
A018	SVOC	Fluoranthene	206-44-0	D	6	3	4.00E-02	2.20E-01		2.20E+04 NC	1.0E-05
A018	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	2	5.43E-02	5.80E-02		2.10E+01 C	2.8E-03
A018	SVOC	Phenanthrene	85-01-8	D	6	3	3.50E-02	1.35E-01		2.90E+04 NC	4.7E-06
A018	SVOC	Pyrene	129-00-0	D	6	3	2.23E-02	2.10E-01		2.90E+04 NC	7.2E-06
A018	INORG	Aluminum	7429-90-5	D	6	6	4.95E+03	1.37E+04	1.48E+04	9.20E+05 NC	
A018	INORG	Antimony	7440-36-0		6	5	2.80E-01	1.60E+00	4.40E-01	4.10E+02 NC	2.8E-03
A018	INORG	Arsenic	7440-38-2	A	6	6	4.00E+00	7.80E+00	1.13E+01	1.60E+01 C	
A018	INORG	Barium	7440-39-3	D	6	6	1.35E+01	5.81E+01	8.38E+01	6.70E+04 NC	
A018	INORG	Beryllium	7440-41-7	B1	6	6	2.95E-01	3.80E+00	5.70E-01	1.90E+03 NC	1.7E-03
A018	INORG	Cadmium	7440-43-9	B1	6	6	1.70E-01	6.80E-01	5.52E-01	4.50E+02 NC	2.8E-04
A018	INORG	Chromium (total)	7440-47-3		6	6	1.12E+01	4.42E+01	2.82E+01	2.50E+03 NC	6.4E-03
A018	INORG	Cobalt	7440-48-4	B1	6	6	3.25E+00	3.68E+01	1.00E+01	1.30E+04 NC	2.1E-03
A018	INORG	Copper	7440-50-8	D	6	6	1.40E+01	5.37E+01	1.89E+01	4.10E+04 NC	8.5E-04
A018	INORG	Iron	7439-89-6	D	6	6	1.28E+04	2.95E+04	2.44E+04	3.10E+05 NC	1.7E-02
A018	INORG	Lead	7439-92-1	B2	6	6	1.20E+01	7.36E+01	2.00E+01	7.50E+02 NC	7.1E-02
A018	INORG	Manganese	7439-96-5	D	6	6	5.37E+01	1.17E+03	6.76E+02	1.90E+04 NC	2.6E-02
A018	INORG	Mercury	7439-97-6	D	6	6	2.70E-02	1.20E-01	7.05E-02	1.36E+01 NC	3.6E-03
A018	INORG	Nickel	7440-02-0	A	6	6	6.55E+00	6.54E+01	1.83E+01	2.00E+04 NC	2.4E-03
A018	INORG	Selenium	7782-49-2	D	6	1	6.30E-01	6.30E-01	3.96E-01	5.10E+03 NC	4.6E-05
A018	INORG	Thallium	7440-28-0		6	1	6.10E-01	6.10E-01	8.40E-01	6.80E+01 NC	
A018	INORG	Vanadium	7440-62-2		6	6	1.40E+01	3.59E+01	4.18E+01	7.20E+03 NC	
A018	INORG	Zinc	7440-66-6	D	6	6	4.38E+01	1.11E+02	5.48E+01	3.10E+05 NC	1.8E-04
A019	VOC	Acetone	67-64-1	ID	2	1	3.60E-02	3.60E-02		6.00E+03 NC	6.0E-06
A019	VOC	2-Butanone	78-93-3	ID	2	1	6.70E-03	6.70E-03		2.70E+04 NC	2.5E-07
A020	VOC	Toluene	108-88-3	D	1	1	1.30E-03	1.30E-03		2.20E+03 NC	5.9E-07

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A020	INORG	Aluminum	7429-90-5	D	1	1	1.55E+03	1.55E+03	1.48E+04	9.20E+05 NC	
A020	INORG	Arsenic	7440-38-2	A	1	1	2.70E+00	2.70E+00	1.13E+01	1.60E+01 C	
A020	INORG	Barium	7440-39-3	D	1	1	2.06E+02	2.06E+02	8.38E+01	6.70E+04 NC	1.8E-03
A020	INORG	Beryllium	7440-41-7	B1	1	1	1.40E-01	1.40E-01	5.70E-01	1.90E+03 NC	
A020	INORG	Cadmium	7440-43-9	B1	1	1	3.00E-01	3.00E-01	5.52E-01	4.50E+02 NC	
A020	INORG	Chromium (total)	7440-47-3		1	1	3.80E+00	3.80E+00	2.82E+01	2.50E+03 NC	
A020	INORG	Cobalt	7440-48-4	B1	1	1	1.90E+00	1.90E+00	1.00E+01	1.30E+04 NC	
A020	INORG	Copper	7440-50-8	D	1	1	6.80E+00	6.80E+00	1.89E+01	4.10E+04 NC	
A020	INORG	Iron	7439-89-6	D	1	1	7.80E+03	7.80E+03	2.44E+04	3.10E+05 NC	
A020	INORG	Lead	7439-92-1	B2	1	1	2.70E+00	2.70E+00	2.00E+01	7.50E+02 NC	
A020	INORG	Manganese	7439-96-5	D	1	1	3.77E+02	3.77E+02	6.76E+02	1.90E+04 NC	
A020	INORG	Nickel	7440-02-0	A	1	1	8.80E+00	8.80E+00	1.83E+01	2.00E+04 NC	
A020	INORG	Vanadium	7440-62-2		1	1	4.70E+00	4.70E+00	4.18E+01	7.20E+03 NC	
A020	INORG	Zinc	7440-66-6	D	1	1	3.46E+01	3.46E+01	5.48E+01	3.10E+05 NC	
A021	VOC	Acetone	67-64-1	ID	44	19	7.00E-03	5.70E-02		6.00E+03 NC	9.5E-06
A021	VOC	Benzene	71-43-2	A	44	2	5.40E-04	7.90E-04		1.30E+01 C	6.1E-05
A021	VOC	2-Butanone	78-93-3	ID	44	15	1.50E-03	1.20E-02		2.70E+04 NC	4.4E-07
A021	VOC	Carbon Disulfide	75-15-0		44	8	1.10E-03	6.40E-02		1.20E+03 NC	5.3E-05
A021	VOC	Cumene	98-82-8	D	44	2	1.10E-03	2.80E-03		2.00E+03 NC	1.4E-06
A021	VOC	Cyclohexane	110-82-7	ID	44	2	6.50E-04	1.10E-03		3.20E+04 NC	3.4E-08
A021	VOC	1,2-Dichlorobenzene	95-50-1	D	44	1	1.10E-03	1.10E-03		4.10E+03 NC	2.7E-07
A021	VOC	1,3-Dichlorobenzene	541-73-1	D	44	1	8.30E-03	8.30E-03		6.30E+01 NC	1.3E-04
A021	VOC	1,4-Dichlorobenzene	106-46-7	C	44	1	2.40E-02	2.40E-02		7.90E+01 C	3.0E-04
A021	VOC	cis-1,2-Dichloroethene	156-59-2	D	44	5	1.30E-03	3.70E-02		1.50E+02 NC	2.5E-04
A021	VOC	Ethyl Benzene	100-41-4	D	44	3	5.40E-04	2.80E-03		7.40E+03 NC	3.8E-07
A021	VOC	Methyl Acetate	79-20-9		44	4	1.40E-03	9.50E-02		9.20E+04 NC	1.0E-06
A021	VOC	4-Methyl-2-pentanone	108-10-1	ID	44	2	2.30E-03	2.50E-03		2.80E+03 NC	8.9E-07
A021	VOC	Methylcyclohexane	108-87-2		44	3	9.00E-04	2.00E-03		8.70E+03 NC	2.3E-07
A021	VOC	Methylene Chloride	75-09-2	B2	44	4	1.30E-03	1.70E-03		2.10E+02 C	8.1E-06
A021	VOC	Toluene	108-88-3	D	44	3	1.30E-03	6.20E-03		2.20E+03 NC	2.8E-06
A021	VOC	1,2,4-Trichlorobenzene	120-82-1	D	44	1	2.20E-02	2.20E-02		5.60E+03 NC	3.9E-06
A021	VOC	Trichloroethene	79-01-6	C-B2	44	3	5.20E-03	2.20E-02		6.12E+01 C	3.6E-04
A021	VOC	Vinyl Chloride	75-01-4	A	44	1	2.20E-03	2.20E-03		7.50E+00 C	2.9E-04
A021	VOC	Xylenes (total)	1330-20-7	ID	44	1	1.30E-02	1.30E-02		9.00E+02 NC	1.4E-05
A021	SVOC	Acenaphthene	83-32-9		44	1	4.50E-01	4.50E-01		2.90E+04 NC	1.6E-05
A021	SVOC	Acetophenone	98-86-2	D	44	2	2.40E-02	3.80E-01			
A021	SVOC	Anthracene	120-12-7	D	44	1	5.80E-01	5.80E-01		2.40E+05 NC	2.4E-06
A021	SVOC	Benzo(a)anthracene	56-55-3	B2	44	3	2.50E-02	7.00E-01		2.10E+01 C	3.3E-02
A021	SVOC	Benzo(a)pyrene	50-32-8	B2	44	2	8.30E-02	7.80E-01		2.10E+00 C	3.7E-01

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A021	SVOC	Benzo(b)fluoranthene	205-99-2	B2	43	2	1.90E-02	8.30E-01		2.10E+01	C 4.0E-02
A021	SVOC	Benzo(g,h,i)perylene	191-24-2	D	44	1	4.90E-01	4.90E-01		2.90E+04	NC 1.7E-05
A021	SVOC	Benzo(k)fluoranthene	207-08-9	B2	43	1	4.50E-01	4.50E-01		2.10E+02	C 2.1E-03
A021	SVOC	Biphenyl	92-52-4	D	44	5	2.50E-02	2.60E-01		2.30E+04	NC 1.1E-05
A021	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	44	7	2.00E-02	3.50E-01		1.20E+03	C 2.9E-04
A021	SVOC	Carbazole	86-74-8	B2	44	1	1.30E-01	1.30E-01		8.60E+02	C 1.5E-04
A021	SVOC	4-Chloroaniline	106-47-8		44	1	1.80E-02	1.80E-02		2.50E+03	NC 7.2E-06
A021	SVOC	Chrysene	218-01-9	B2	43	3	3.10E-02	8.10E-01		2.10E+03	C 3.9E-04
A021	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	44	1	1.10E-01	1.10E-01		2.10E+00	C 5.2E-02
A021	SVOC	Dibenzofuran	132-64-9	D	44	3	5.10E-02	2.20E-01		3.10E+03	NC 7.1E-05
A021	SVOC	2,4-Dimethylphenol	105-67-9		44	2	1.40E-01	1.20E+00		1.20E+04	NC 1.0E-04
A021	SVOC	Di-n-octylphthalate	117-84-0		44	1	4.30E-01	4.30E-01		2.50E+04	NC 1.7E-05
A021	SVOC	Fluoranthene	206-44-0	D	44	5	2.90E-02	2.10E+00		2.20E+04	NC 9.5E-05
A021	SVOC	Fluorene	86-73-7	D	44	3	5.00E-02	2.30E-01		2.60E+04	NC 8.8E-06
A021	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	44	1	4.30E-01	4.30E-01		2.10E+01	C 2.0E-02
A021	SVOC	2-Methylnaphthalene	91-57-6	ID	44	7	3.50E-02	5.60E-01		1.90E+02	NC 2.9E-03
A021	SVOC	Methylphenol (total)	1319-77-3		44	3	1.02E-01	2.33E+00		3.10E+03	NC 7.5E-04
A021	SVOC	Naphthalene	91-20-3	C	44	4	3.10E-02	4.00E-01		1.90E+02	NC 2.1E-03
A021	SVOC	Phenanthrene	85-01-8	D	44	8	4.90E-02	1.50E+00		2.90E+04	NC 5.2E-05
A021	SVOC	Phenol	108-95-2	ID	44	3	7.60E-02	1.10E+00		3.70E+05	NC 3.0E-06
A021	SVOC	Pyrene	129-00-0	D	44	5	2.10E-02	1.60E+00		2.90E+04	NC 5.5E-05
A021	P/PCB	PCBs (total)	1336-36-3	B2	44	9	3.97E-02	1.54E+01		7.40E+00	C 2.1E+00
A021	INORG	Aluminum	7429-90-5	D	44	44	7.15E+02	4.09E+04	1.48E+04	9.20E+05	NC 2.8E-02
A021	INORG	Antimony	7440-36-0		44	3	2.80E-01	7.60E-01	4.40E-01	4.10E+02	NC 7.8E-04
A021	INORG	Arsenic	7440-38-2	A	44	43	5.50E-01	3.33E+01	1.13E+01	1.60E+01	C 1.4E+00
A021	INORG	Barium	7440-39-3	D	44	44	3.20E+00	1.48E+02	8.38E+01	6.70E+04	NC 9.6E-04
A021	INORG	Beryllium	7440-41-7	B1	44	23	2.10E-01	2.50E+00	5.70E-01	1.90E+03	NC 1.0E-03
A021	INORG	Cadmium	7440-43-9	B1	44	30	3.70E-02	2.10E+00	5.52E-01	4.50E+02	NC 3.4E-03
A021	INORG	Chromium (total)	7440-47-3		44	44	1.90E+00	8.24E+01	2.82E+01	2.50E+03	NC 2.2E-02
A021	INORG	Cobalt	7440-48-4	B1	44	43	6.50E-01	5.23E+01	1.00E+01	1.30E+04	NC 3.3E-03
A021	INORG	Copper	7440-50-8	D	44	44	4.40E+00	5.28E+02	1.89E+01	4.10E+04	NC 1.2E-02
A021	INORG	Cyanide (amenable)	57-12-5A		44	1	2.20E-01	2.20E-01		1.20E+04	NC 1.8E-05
A021	INORG	Cyanide (total)	57-12-5	D	44	1	2.20E-01	2.20E-01		1.20E+04	NC 1.8E-05
A021	INORG	Iron	7439-89-6	D	44	44	5.49E+02	4.29E+04	2.44E+04	3.10E+05	NC 6.0E-02
A021	INORG	Lead	7439-92-1	B2	44	44	3.90E+00	6.26E+01	2.00E+01	7.50E+02	NC 5.7E-02
A021	INORG	Manganese	7439-96-5	D	44	44	1.01E+01	8.65E+02	6.76E+02	1.90E+04	NC 9.9E-03
A021	INORG	Mercury	7439-97-6	D	44	35	1.80E-02	1.40E+00	7.05E-02	1.36E+01	NC 9.7E-02
A021	INORG	Nickel	7440-02-0	A	44	44	1.50E+00	7.71E+01	1.83E+01	2.00E+04	NC 2.9E-03
A021	INORG	Selenium	7782-49-2	D	44	19	3.60E-01	8.50E-01	3.96E-01	5.10E+03	NC 8.9E-05

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A021	INORG	Thallium	7440-28-0		44	11	5.70E-01	1.40E+00	8.40E-01	6.80E+01 NC	8.2E-03
A021	INORG	Vanadium	7440-62-2		44	44	1.20E+00	5.49E+01	4.18E+01	7.20E+03 NC	1.8E-03
A021	INORG	Zinc	7440-66-6	D	44	44	1.43E+01	1.83E+02	5.48E+01	3.10E+05 NC	4.1E-04
A022	VOC	Acetone	67-64-1	ID	10	1	8.40E-03	8.40E-03		6.00E+03 NC	1.4E-06
A022	VOC	Benzene	71-43-2	A	10	1	7.80E-04	7.80E-04		1.30E+01 C	6.0E-05
A022	VOC	Methylene Chloride	75-09-2	B2	10	1	1.60E-03	1.60E-03		2.10E+02 C	7.6E-06
A022	VOC	Toluene	108-88-3	D	10	1	7.60E-04	7.60E-04		2.20E+03 NC	3.5E-07
A022	SVOC	Anthracene	120-12-7	D	10	1	6.40E-02	6.40E-02		2.40E+05 NC	2.7E-07
A022	SVOC	Benzo(a)anthracene	56-55-3	B2	10	1	5.00E-02	5.00E-02		2.10E+01 C	2.4E-03
A022	SVOC	Benzo(a)pyrene	50-32-8	B2	10	1	5.20E-02	5.20E-02		2.10E+00 C	2.5E-02
A022	SVOC	Benzo(b)fluoranthene	205-99-2	B2	10	1	1.60E-01	1.60E-01		2.10E+01 C	7.6E-03
A022	SVOC	Benzo(g,h,i)perylene	191-24-2	D	10	1	4.00E-02	4.00E-02		2.90E+04 NC	1.4E-06
A022	SVOC	Benzo(k)fluoranthene	207-08-9	B2	10	1	1.10E-01	1.10E-01		2.10E+02 C	5.2E-04
A022	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	10	1	8.40E-02	8.40E-02		1.20E+03 C	7.0E-05
A022	SVOC	Chrysene	218-01-9	B2	10	1	7.10E-02	7.10E-02		2.10E+03 C	3.4E-05
A022	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	10	1	8.70E-02	8.70E-02		2.10E+00 C	4.1E-02
A022	SVOC	Fluoranthene	206-44-0	D	10	1	1.40E-01	1.40E-01		2.20E+04 NC	6.4E-06
A022	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	10	1	1.00E-01	1.00E-01		2.10E+01 C	4.8E-03
A022	SVOC	Phenanthrene	85-01-8	D	10	1	9.00E-02	9.00E-02		2.90E+04 NC	3.1E-06
A022	SVOC	Pyrene	129-00-0	D	10	1	7.60E-02	7.60E-02		2.90E+04 NC	2.6E-06
A022	INORG	Aluminum	7429-90-5	D	10	10	4.25E+03	1.25E+04	1.48E+04	9.20E+05 NC	
A022	INORG	Antimony	7440-36-0		10	4	2.60E-01	1.10E+00	4.40E-01	4.10E+02 NC	1.6E-03
A022	INORG	Arsenic	7440-38-2	A	10	10	1.30E+00	8.10E+00	1.13E+01	1.60E+01 C	
A022	INORG	Barium	7440-39-3	D	10	10	1.56E+01	8.58E+01	8.38E+01	6.70E+04 NC	3.0E-05
A022	INORG	Beryllium	7440-41-7	B1	10	8	3.30E-01	1.70E+00	5.70E-01	1.90E+03 NC	5.9E-04
A022	INORG	Cadmium	7440-43-9	B1	10	10	2.30E-01	3.70E+00	5.52E-01	4.50E+02 NC	7.0E-03
A022	INORG	Chromium (total)	7440-47-3		10	10	5.00E+00	1.57E+01	2.82E+01	2.50E+03 NC	
A022	INORG	Cobalt	7440-48-4	B1	10	10	8.80E-01	1.20E+01	1.00E+01	1.30E+04 NC	1.5E-04
A022	INORG	Copper	7440-50-8	D	10	10	1.80E+00	2.61E+01	1.89E+01	4.10E+04 NC	1.8E-04
A022	INORG	Cyanide (amenable)	57-12-5A		10	2	1.20E-01	1.30E-01		1.20E+04 NC	1.1E-05
A022	INORG	Cyanide (total)	57-12-5	D	10	2	1.20E-01	1.30E-01		1.20E+04 NC	1.1E-05
A022	INORG	Iron	7439-89-6	D	10	10	3.19E+03	3.04E+04	2.44E+04	3.10E+05 NC	1.9E-02
A022	INORG	Lead	7439-92-1	B2	10	10	1.30E+00	3.66E+01	2.00E+01	7.50E+02 NC	2.2E-02
A022	INORG	Manganese	7439-96-5	D	10	10	1.09E+02	8.04E+02	6.76E+02	1.90E+04 NC	6.7E-03
A022	INORG	Mercury	7439-97-6	D	10	9	2.30E-02	1.70E-01	7.05E-02	1.36E+01 NC	7.3E-03
A022	INORG	Nickel	7440-02-0	A	10	10	1.90E+00	4.26E+01	1.83E+01	2.00E+04 NC	1.2E-03
A022	INORG	Selenium	7782-49-2	D	10	3	5.60E-01	8.20E-01	3.96E-01	5.10E+03 NC	8.3E-05
A022	INORG	Thallium	7440-28-0		10	7	4.80E-01	9.20E-01	8.40E-01	6.80E+01 NC	1.2E-03
A022	INORG	Vanadium	7440-62-2		10	10	3.80E+00	2.54E+01	4.18E+01	7.20E+03 NC	

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A022	INORG	Zinc	7440-66-6	D	10	10	1.64E+01	8.34E+01	5.48E+01	3.10E+05 NC	9.2E-05
A023	P/PCB	PCBs (total)	1336-36-3	B2	1	1	3.80E+00	3.80E+00		7.40E+00 C	5.1E-01
A023	INORG	Aluminum	7429-90-5	D	1	1	1.10E+04	1.10E+04	1.48E+04	9.20E+05 NC	
A023	INORG	Arsenic	7440-38-2	A	1	1	9.90E+00	9.90E+00	1.13E+01	1.60E+01 C	
A023	INORG	Barium	7440-39-3	D	1	1	7.22E+01	7.22E+01	8.38E+01	6.70E+04 NC	
A023	INORG	Beryllium	7440-41-7	B1	1	1	7.40E-01	7.40E-01	5.70E-01	1.90E+03 NC	8.9E-05
A023	INORG	Cadmium	7440-43-9	B1	1	1	4.90E-01	4.90E-01	5.52E-01	4.50E+02 NC	
A023	INORG	Chromium (total)	7440-47-3		1	1	1.84E+01	1.84E+01	2.82E+01	2.50E+03 NC	
A023	INORG	Cobalt	7440-48-4	B1	1	1	1.41E+01	1.41E+01	1.00E+01	1.30E+04 NC	3.1E-04
A023	INORG	Copper	7440-50-8	D	1	1	1.45E+01	1.45E+01	1.89E+01	4.10E+04 NC	
A023	INORG	Iron	7439-89-6	D	1	1	2.28E+04	2.28E+04	2.44E+04	3.10E+05 NC	
A023	INORG	Lead	7439-92-1	B2	1	1	2.14E+01	2.14E+01	2.00E+01	7.50E+02 NC	1.8E-03
A023	INORG	Manganese	7439-96-5	D	1	1	4.92E+02	4.92E+02	6.76E+02	1.90E+04 NC	
A023	INORG	Mercury	7439-97-6	D	1	1	6.70E-02	6.70E-02	7.05E-02	1.36E+01 NC	
A023	INORG	Nickel	7440-02-0	A	1	1	2.21E+01	2.21E+01	1.83E+01	2.00E+04 NC	1.9E-04
A023	INORG	Vanadium	7440-62-2		1	1	2.82E+01	2.82E+01	4.18E+01	7.20E+03 NC	
A023	INORG	Zinc	7440-66-6	D	1	1	5.36E+01	5.36E+01	5.48E+01	3.10E+05 NC	
A024	VOC	Chloroform	67-66-3	B2	2	1	6.80E-03	6.80E-03		1.20E+01 NC	5.7E-04
A024	P/PCB	PCBs (total)	1336-36-3	B2	2	1	7.16E-02	7.16E-02		7.40E+00 C	9.7E-03
A024	INORG	Aluminum	7429-90-5	D	2	2	7.57E+03	1.46E+04	1.48E+04	9.20E+05 NC	
A024	INORG	Arsenic	7440-38-2	A	2	2	5.60E+00	1.02E+01	1.13E+01	1.60E+01 C	
A024	INORG	Barium	7440-39-3	D	2	2	4.50E+01	4.81E+01	8.38E+01	6.70E+04 NC	
A024	INORG	Beryllium	7440-41-7	B1	2	2	3.50E-01	6.40E-01	5.70E-01	1.90E+03 NC	3.7E-05
A024	INORG	Chromium (total)	7440-47-3		2	2	1.13E+01	5.10E+01	2.82E+01	2.50E+03 NC	9.1E-03
A024	INORG	Cobalt	7440-48-4	B1	2	2	2.20E+00	7.70E+00	1.00E+01	1.30E+04 NC	
A024	INORG	Copper	7440-50-8	D	2	2	8.40E+00	1.25E+01	1.89E+01	4.10E+04 NC	
A024	INORG	Iron	7439-89-6	D	2	2	1.55E+04	4.94E+04	2.44E+04	3.10E+05 NC	8.1E-02
A024	INORG	Lead	7439-92-1	B2	2	2	1.22E+01	1.80E+01	2.00E+01	7.50E+02 NC	
A024	INORG	Manganese	7439-96-5	D	2	2	5.74E+01	4.51E+02	6.76E+02	1.90E+04 NC	
A024	INORG	Mercury	7439-97-6	D	2	1	5.70E-02	5.70E-02	7.05E-02	1.36E+01 NC	
A024	INORG	Nickel	7440-02-0	A	2	2	8.40E+00	8.70E+00	1.83E+01	2.00E+04 NC	
A024	INORG	Selenium	7782-49-2	D	2	2	8.00E-01	2.40E+00	3.96E-01	5.10E+03 NC	3.9E-04
A024	INORG	Vanadium	7440-62-2		2	2	2.19E+01	9.26E+01	4.18E+01	7.20E+03 NC	7.1E-03
A024	INORG	Zinc	7440-66-6	D	2	2	2.73E+01	4.07E+01	5.48E+01	3.10E+05 NC	
Background	VOC	Toluene	108-88-3	D	5	1	2.80E-03	2.80E-03		2.20E+03 NC	1.3E-06
Background	INORG	Aluminum	7429-90-5	D	5	5	7.07E+03	2.08E+04	1.48E+04	9.20E+05 NC	6.5E-03
Background	INORG	Arsenic	7440-38-2	A	5	5	5.70E+00	1.86E+01	1.13E+01	1.60E+01 C	4.6E-01
Background	INORG	Barium	7440-39-3	D	5	5	7.70E+00	1.46E+02	8.38E+01	6.70E+04 NC	9.3E-04
Background	INORG	Beryllium	7440-41-7	B1	5	5	3.40E-01	6.25E+00	5.70E-01	1.90E+03 NC	3.0E-03

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
Background	INORG	Cadmium	7440-43-9	B1	5	3	2.90E-01	4.35E-01	5.52E-01	4.50E+02 NC	
Background	INORG	Chromium (total)	7440-47-3		5	5	1.40E+01	5.78E+01	2.82E+01	2.50E+03 NC	1.2E-02
Background	INORG	Cobalt	7440-48-4	B1	5	5	2.00E+00	1.18E+01	1.00E+01	1.30E+04 NC	1.3E-04
Background	INORG	Copper	7440-50-8	D	5	5	9.60E+00	2.88E+01	1.89E+01	4.10E+04 NC	2.4E-04
Background	INORG	Iron	7439-89-6	D	5	5	1.51E+04	4.18E+04	2.44E+04	3.10E+05 NC	5.6E-02
Background	INORG	Lead	7439-92-1	B2	5	5	9.10E+00	1.91E+01	2.00E+01	7.50E+02 NC	
Background	INORG	Manganese	7439-96-5	D	5	5	7.20E+01	1.10E+03	6.76E+02	1.90E+04 NC	2.2E-02
Background	INORG	Mercury	7439-97-6	D	5	4	4.25E-02	7.00E-02	7.05E-02	1.36E+01 NC	
Background	INORG	Nickel	7440-02-0	A	5	5	1.02E+01	1.01E+02	1.83E+01	2.00E+04 NC	4.1E-03
Background	INORG	Selenium	7782-49-2	D	5	2	3.30E-01	6.50E-01	3.96E-01	5.10E+03 NC	5.0E-05
Background	INORG	Thallium	7440-28-0		5	1	5.95E-01	5.95E-01	8.40E-01	6.80E+01 NC	
Background	INORG	Vanadium	7440-62-2		5	5	1.54E+01	8.11E+01	4.18E+01	7.20E+03 NC	5.5E-03
Background	INORG	Zinc	7440-66-6	D	5	5	3.42E+01	8.84E+01	5.48E+01	3.10E+05 NC	1.1E-04
P215(GM)	P/PCB	PCBs (total)	1336-36-3	B2	2	2	7.67E-01	3.33E+00		7.40E+00 C	4.5E-01
Plant_Boundary	SVOC	Phenol	108-95-2	ID	7	1	1.60E+00	1.60E+00		3.70E+05 NC	4.3E-06
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	7	5	6.83E-02	4.73E-01		7.40E+00 C	6.4E-02
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	2.35E+03	2.61E+04	1.48E+04	9.20E+05 NC	1.2E-02
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7	2.50E+00	1.80E+01	1.13E+01	1.60E+01 C	4.2E-01
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	1.32E+01	1.37E+02	8.38E+01	6.70E+04 NC	7.9E-04
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	6	6.40E-02	1.60E+00	5.70E-01	1.90E+03 NC	5.4E-04
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	7	1.20E-01	7.60E-01	5.52E-01	4.50E+02 NC	4.6E-04
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	1.15E+01	4.73E+01	2.82E+01	2.50E+03 NC	7.7E-03
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	2.40E+00	1.25E+01	1.00E+01	1.30E+04 NC	1.9E-04
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	1.18E+01	3.99E+01	1.89E+01	4.10E+04 NC	5.1E-04
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7	4.09E+03	3.46E+04	2.44E+04	3.10E+05 NC	3.3E-02
Plant_Boundary	INORG	Lead	7439-92-1	B2	7	7	1.37E+01	2.11E+01	2.00E+01	7.50E+02 NC	1.4E-03
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	6.57E+01	1.26E+03	6.76E+02	1.90E+04 NC	3.1E-02
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	5.70E-02	2.40E-01	7.05E-02	1.36E+01 NC	1.2E-02
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	1.73E+01	6.50E+01	1.83E+01	2.00E+04 NC	2.3E-03
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	2	1.20E+00	1.50E+00	3.96E-01	5.10E+03 NC	2.2E-04
Plant_Boundary	INORG	Thallium	7440-28-0		7	2	1.00E+00	1.10E+00	8.40E-01	6.80E+01 NC	3.8E-03
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7	4.80E+00	6.06E+01	4.18E+01	7.20E+03 NC	2.6E-03
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	3.74E+01	1.08E+02	5.48E+01	3.10E+05 NC	1.7E-04
Plant_LaSalle	VOC	cis-1,2-Dichloroethene	156-59-2	D	3	1	1.50E-02	1.50E-02		1.50E+02 NC	1.0E-04
Plant_LaSalle	VOC	Toluene	108-88-3	D	3	1	1.90E-03	1.90E-03		2.20E+03 NC	8.6E-07
Plant_LaSalle	VOC	Vinyl Chloride	75-01-4	A	3	1	5.50E-03	5.50E-03		7.50E+00 C	7.3E-04
Plant_LaSalle	INORG	Aluminum	7429-90-5	D	3	3	8.07E+03	1.11E+04	1.48E+04	9.20E+05 NC	
Plant_LaSalle	INORG	Antimony	7440-36-0		3	1	7.50E-01	7.50E-01	4.40E-01	4.10E+02 NC	7.6E-04
Plant_LaSalle	INORG	Arsenic	7440-38-2	A	3	3	2.60E+00	8.00E+00	1.13E+01	1.60E+01 C	

**Table 2-1b: On-Site Subsurface Soil Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Background (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
Plant_LaSalle	INORG	Barium	7440-39-3	D	3	3	2.84E+01	5.90E+01	8.38E+01	6.70E+04	NC
Plant_LaSalle	INORG	Beryllium	7440-41-7	B1	3	3	3.50E-01	1.20E+00	5.70E-01	1.90E+03	NC
Plant_LaSalle	INORG	Cadmium	7440-43-9	B1	3	3	1.70E-01	3.30E+00	5.52E-01	4.50E+02	NC
Plant_LaSalle	INORG	Chromium (total)	7440-47-3		3	3	1.80E+01	3.50E+01	2.82E+01	2.50E+03	NC
Plant_LaSalle	INORG	Cobalt	7440-48-4	B1	3	3	9.20E-01	9.50E+00	1.00E+01	1.30E+04	NC
Plant_LaSalle	INORG	Copper	7440-50-8	D	3	3	8.60E+00	2.59E+01	1.89E+01	4.10E+04	NC
Plant_LaSalle	INORG	Iron	7439-89-6	D	3	3	1.24E+04	3.72E+04	2.44E+04	3.10E+05	NC
Plant_LaSalle	INORG	Lead	7439-92-1	B2	3	3	9.80E+00	2.45E+01	2.00E+01	7.50E+02	NC
Plant_LaSalle	INORG	Manganese	7439-96-5	D	3	3	2.41E+01	7.35E+02	6.76E+02	1.90E+04	NC
Plant_LaSalle	INORG	Mercury	7439-97-6	D	3	3	3.30E-02	7.20E-02	7.05E-02	1.36E+01	NC
Plant_LaSalle	INORG	Nickel	7440-02-0	A	3	3	7.00E+00	4.07E+01	1.83E+01	2.00E+04	NC
Plant_LaSalle	INORG	Selenium	7782-49-2	D	3	2	6.10E-01	1.10E+00	3.96E-01	5.10E+03	NC
Plant_LaSalle	INORG	Thallium	7440-28-0		3	1	7.10E-01	7.10E-01	8.40E-01	6.80E+01	NC
Plant_LaSalle	INORG	Vanadium	7440-62-2		3	3	2.92E+01	6.73E+01	4.18E+01	7.20E+03	NC
Plant_LaSalle	INORG	Zinc	7440-66-6	D	3	3	2.32E+01	9.71E+01	5.48E+01	3.10E+05	NC
	Notes:										
	Only constituents detected at each area are shown.										
	Shaded cells represent ratios of conc to the screening criteria greater than 1.										
	Ratios are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.										
	The Screening Criteria for residential and industrial soil is the lower of the integrated Screening Criteria at:										
		target cancer risk =	1E-05								
		target hazard quotient =	1								
	The Screening Criteria for Pyrene were used as surrogates for Phenanthrene and Benzo(g,h,i)perylene.										
	The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.										
	The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).										
	The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Criteria for 4-Methylphenol.										
	The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs) for cancer effects										
		and Aroclor 1254 for noncancer effects.									
	The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.										
	The Screening Criteria for Mercury was calculated by ENVIRON to account for the vapor inhalation pathway using:										
	EPA Region 9 equations, RfC from IRIS, and chemical properties from EPA's Soil Screening Guidance.										
	C - The Screening Criterion is based on cancer risk.										
	NC - The Screening Criterion is based on noncancer effects.										
	Chem Group - Chemical Group										
	Carc Class - EPA Weight-of-Evidence Cancer Classification										
	Plant Boundary includes locations: B-X261Y356, BK-X045Y258, MW-X033Y147S, MW-X045Y258D, MW-X178Y367D, MW-X234Y157D,										
	MW-X261Y356D, and MW-X269Y201D.										

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
101 M Street	P/PCB	PCBs (total)	1336-36-3	B2	4	4	6.73E-02	1.25E-01		2.00E+00 C	6.3E-02
1207 Third Street	P/PCB	PCBs (total)	1336-36-3	B2	10	5	8.13E-02	3.54E+00		2.00E+00 C	1.8E+00
1211 3rd Street	P/PCB	PCBs (total)	1336-36-3	B2	3	3	6.70E-02	3.31E-01		2.00E+00 C	1.7E-01
316 L Street	P/PCB	PCBs (total)	1336-36-3	B2	3	2	7.11E-02	8.71E-02		2.00E+00 C	4.4E-02
612 4th Street	P/PCB	PCBs (total)	1336-36-3	B2	3	3	6.55E-02	1.01E-01		2.00E+00 C	5.0E-02
A025	VOC	Acetone	67-64-1	ID	16	4	6.33E-03	3.20E-02		1.60E+03 NC	2.0E-05
A025	VOC	Benzene	71-43-2	A	16	2	9.50E-04	5.40E-03		6.00E+00 C	9.0E-04
A025	VOC	2-Butanone	78-93-3	ID	16	7	1.05E-03	3.60E-03		7.30E+03 NC	4.9E-07
A025	VOC	Carbon Disulfide	75-15-0		16	1	1.60E-03	1.60E-03		3.60E+02 NC	4.4E-06
A025	VOC	Cyclohexane	110-82-7	ID	16	1	2.40E-03	2.40E-03		9.50E+03 NC	2.5E-07
A025	VOC	Ethyl Benzene	100-41-4	D	16	2	2.83E-04	2.00E-03		1.90E+03 NC	1.1E-06
A025	VOC	2-Hexanone	591-78-6		16	1	4.50E-03	4.50E-03			
A025	VOC	Toluene	108-88-3	D	16	6	6.30E-04	7.90E-03		6.60E+02 NC	1.2E-05
A025	VOC	Xylenes (total)	1330-20-7	ID	16	1	1.20E-03	1.20E-03		2.80E+02 NC	4.3E-06
A025	SVOC	Acenaphthene	83-32-9		16	5	1.90E-02	1.10E-01		3.70E+03 NC	3.0E-05
A025	SVOC	Acenaphthylene	208-96-8	D	16	2	2.60E-02	8.70E-01		2.30E+03 NC	3.8E-04
A025	SVOC	Anthracene	120-12-7	D	16	10	1.32E-02	8.80E-01		2.20E+04 NC	4.0E-05
A025	SVOC	Benzo(a)anthracene	56-55-3	B2	16	15	3.20E-02	2.60E+00		6.20E+00 C	4.2E-01
A025	SVOC	Benzo(a)pyrene	50-32-8	B2	16	15	3.60E-02	2.70E+00		6.20E-01 C	4.4E+00
A025	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	15	4.90E-02	4.75E+00		6.20E+00 C	7.7E-01
A025	SVOC	Benzo(g,h,i)perylene	191-24-2	D	16	16	1.57E-02	2.30E+00		2.30E+03 NC	1.0E-03
A025	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	15	1.80E-02	1.90E+00		6.20E+01 C	3.1E-02
A025	SVOC	Biphenyl	92-52-4	D	16	1	9.95E-03	9.95E-03		3.00E+03 NC	3.3E-06
A025	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	2	3.98E-02	8.90E-02		3.50E+02 C	2.5E-04
A025	SVOC	Carbazole	86-74-8	B2	16	2	1.70E-02	3.00E-02		2.40E+02 C	1.3E-04
A025	SVOC	Chrysene	218-01-9	B2	16	15	3.30E-02	2.50E+00		6.20E+02 C	4.0E-03
A025	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	16	12	2.40E-02	7.10E-01		6.20E-01 C	1.1E+00
A025	SVOC	Dibenzofuran	132-64-9	D	16	2	1.90E-02	9.40E-02		2.90E+02 NC	3.2E-04
A025	SVOC	Di-n-butylphthalate	84-74-2	D	16	2	1.80E-02	3.50E-02		6.10E+03 NC	5.7E-06
A025	SVOC	Fluoranthene	206-44-0	D	16	15	3.60E-02	5.10E+00		2.30E+03 NC	2.2E-03
A025	SVOC	Fluorene	86-73-7	D	16	2	2.00E-02	3.10E-01		2.70E+03 NC	1.1E-04
A025	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	16	15	2.20E-02	2.05E+00		6.20E+00 C	3.3E-01
A025	SVOC	2-Methylnaphthalene	91-57-6	ID	16	7	1.50E-02	5.00E-02		5.60E+01 NC	8.9E-04
A025	SVOC	Naphthalene	91-20-3	C	16	7	1.13E-02	7.30E-02		5.60E+01 NC	1.3E-03
A025	SVOC	Phenanthrene	85-01-8	D	16	14	3.10E-02	2.00E+00		2.30E+03 NC	8.7E-04
A025	SVOC	Pyrene	129-00-0	D	16	15	4.70E-02	4.10E+00		2.30E+03 NC	1.8E-03
A025	P/PCB	PCBs (total)	1336-36-3	B2	16	9	6.80E-03	9.73E-02		2.00E+00 C	4.9E-02
A025	INORG	Aluminum	7429-90-5	D	16	16	1.40E+03	1.43E+04	1.48E+04	7.60E+04 NC	

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A025	INORG	Antimony	7440-36-0		16	15	4.10E-01	3.75E+00	4.40E-01	3.10E+01 NC	1.1E-01
A025	INORG	Arsenic	7440-38-2	A	16	16	2.00E+00	9.60E+00	1.13E+01	3.90E+00 C	
A025	INORG	Barium	7440-39-3	D	16	16	1.61E+01	8.12E+01	8.38E+01	5.40E+03 NC	
A025	INORG	Beryllium	7440-41-7	B1	16	16	7.10E-02	1.00E+00	5.70E-01	1.50E+02 NC	2.9E-03
A025	INORG	Cadmium	7440-43-9	B1	16	16	9.60E-02	8.30E-01	5.52E-01	3.70E+01 NC	7.5E-03
A025	INORG	Chromium (total)	7440-47-3		16	16	7.40E+00	3.89E+01	2.82E+01	2.20E+02 NC	4.9E-02
A025	INORG	Cobalt	7440-48-4	B1	16	16	1.70E+00	1.29E+01	1.00E+01	1.40E+03 NC	2.0E-03
A025	INORG	Copper	7440-50-8	D	16	16	1.89E+01	2.15E+02	1.89E+01	3.10E+03 NC	6.3E-02
A025	INORG	Cyanide (total)	57-12-5	D	16	1	1.90E-01	1.90E-01		1.20E+03 NC	1.6E-04
A025	INORG	Iron	7439-89-6	D	16	16	1.15E+04	5.10E+04	2.44E+04	2.30E+04 NC	1.2E+00
A025	INORG	Lead	7439-92-1	B2	16	16	1.85E+01	9.46E+02	2.00E+01	4.00E+02 NC	2.3E+00
A025	INORG	Manganese	7439-96-5	D	16	16	1.49E+02	6.74E+02	6.76E+02	1.80E+03 NC	
A025	INORG	Mercury	7439-97-6	D	16	9	2.70E-02	8.51E-01	7.05E-02	3.67E+00 NC	2.1E-01
A025	INORG	Nickel	7440-02-0	A	16	16	8.30E+00	4.33E+01	1.83E+01	1.60E+03 NC	1.6E-02
A025	INORG	Selenium	7782-49-2	D	16	7	2.58E-01	1.20E+00	3.96E-01	3.90E+02 NC	2.1E-03
A025	INORG	Silver	7440-22-4	D	16	2	1.75E-01	1.90E-01		3.90E+02 NC	4.9E-04
A025	INORG	Thallium	7440-28-0		16	2	4.90E-01	4.90E-01	8.40E-01	5.20E+00 NC	
A025	INORG	Vanadium	7440-62-2		16	16	3.20E+00	3.48E+01	4.18E+01	5.50E+02 NC	
A025	INORG	Zinc	7440-66-6	D	16	16	2.97E+01	2.47E+02	5.48E+01	2.30E+04 NC	8.4E-03
A026	SVOC	Anthracene	120-12-7	D	1	1	8.60E-02	8.60E-02		2.20E+04 NC	3.9E-06
A026	SVOC	Benzo(a)anthracene	56-55-3	B2	1	1	1.80E-01	1.80E-01		6.20E+00 C	2.9E-02
A026	SVOC	Benzo(a)pyrene	50-32-8	B2	1	1	1.20E-01	1.20E-01		6.20E-01 C	1.9E-01
A026	SVOC	Benzo(b)fluoranthene	205-99-2	B2	1	1	2.40E-01	2.40E-01		6.20E+00 C	3.9E-02
A026	SVOC	Benzo(g,h,i)perylene	191-24-2	D	1	1	1.10E-01	1.10E-01		2.30E+03 NC	4.8E-05
A026	SVOC	Benzo(k)fluoranthene	207-08-9	B2	1	1	8.90E-02	8.90E-02		6.20E+01 C	1.4E-03
A026	SVOC	Chrysene	218-01-9	B2	1	1	1.90E-01	1.90E-01		6.20E+02 C	3.1E-04
A026	SVOC	Fluoranthene	206-44-0	D	1	1	4.00E-01	4.00E-01		2.30E+03 NC	1.7E-04
A026	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1	1	9.90E-02	9.90E-02		6.20E+00 C	1.6E-02
A026	SVOC	Phenanthrene	85-01-8	D	1	1	3.60E-01	3.60E-01		2.30E+03 NC	1.6E-04
A026	SVOC	Pyrene	129-00-0	D	1	1	3.40E-01	3.40E-01		2.30E+03 NC	1.5E-04
A026	P/PCB	PCBs (total)	1336-36-3	B2	1	1	7.14E+00	7.14E+00		2.00E+00 C	3.6E+00
A026	INORG	Aluminum	7429-90-5	D	1	1	3.28E+03	3.28E+03	1.48E+04	7.60E+04 NC	
A026	INORG	Antimony	7440-36-0		1	1	2.90E-01	2.90E-01	4.40E-01	3.10E+01 NC	
A026	INORG	Arsenic	7440-38-2	A	1	1	2.30E+00	2.30E+00	1.13E+01	3.90E+00 C	
A026	INORG	Barium	7440-39-3	D	1	1	4.22E+01	4.22E+01	8.38E+01	5.40E+03 NC	
A026	INORG	Cadmium	7440-43-9	B1	1	1	5.80E-01	5.80E-01	5.52E-01	3.70E+01 NC	7.5E-04
A026	INORG	Chromium (total)	7440-47-3		1	1	7.10E+00	7.10E+00	2.82E+01	2.20E+02 NC	
A026	INORG	Cobalt	7440-48-4	B1	1	1	3.10E+00	3.10E+00	1.00E+01	1.40E+03 NC	

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria	
A026	INORG	Copper	7440-50-8	D	1	1	4.50E+01	4.50E+01	1.89E+01	3.10E+03	NC	8.4E-03
A026	INORG	Iron	7439-89-6	D	1	1	6.42E+03	6.42E+03	2.44E+04	2.30E+04	NC	
A026	INORG	Lead	7439-92-1	B2	1	1	2.40E+01	2.40E+01	2.00E+01	4.00E+02	NC	9.9E-03
A026	INORG	Manganese	7439-96-5	D	1	1	1.46E+02	1.46E+02	6.76E+02	1.80E+03	NC	
A026	INORG	Mercury	7439-97-6	D	1	1	1.20E-02	1.20E-02	7.05E-02	3.67E+00	NC	
A026	INORG	Nickel	7440-02-0	A	1	1	8.50E+00	8.50E+00	1.83E+01	1.60E+03	NC	
A026	INORG	Vanadium	7440-62-2		1	1	8.80E+00	8.80E+00	4.18E+01	5.50E+02	NC	
A026	INORG	Zinc	7440-66-6	D	1	1	4.77E+01	4.77E+01	5.48E+01	2.30E+04	NC	
A027	VOC	Acetone	67-64-1	ID	2	1	1.75E-02	1.75E-02		1.60E+03	NC	1.1E-05
A027	VOC	2-Butanone	78-93-3	ID	2	1	2.63E-03	2.63E-03		7.30E+03	NC	3.6E-07
A027	VOC	Cumene	98-82-8	D	2	1	4.10E-02	4.10E-02		5.70E+02	NC	7.2E-05
A027	VOC	Ethyl Benzene	100-41-4	D	2	1	4.38E-04	4.38E-04		1.90E+03	NC	2.3E-07
A027	VOC	Methyl Acetate	79-20-9		2	1	1.90E-01	1.90E-01		2.20E+04	NC	8.6E-06
A027	VOC	Toluene	108-88-3	D	2	1	1.04E-03	1.04E-03		6.60E+02	NC	1.6E-06
A027	SVOC	Acenaphthene	83-32-9		2	1	2.28E-02	2.28E-02		3.70E+03	NC	6.2E-06
A027	SVOC	Anthracene	120-12-7	D	2	1	4.75E-02	4.75E-02		2.20E+04	NC	2.2E-06
A027	SVOC	Benzo(a)anthracene	56-55-3	B2	2	1	1.75E-01	1.75E-01		6.20E+00	C	2.8E-02
A027	SVOC	Benzo(a)pyrene	50-32-8	B2	2	1	2.50E-01	2.50E-01		6.20E-01	C	4.0E-01
A027	SVOC	Benzo(b)fluoranthene	205-99-2	B2	2	1	1.85E-01	1.85E-01		6.20E+00	C	3.0E-02
A027	SVOC	Benzo(g,h,i)perylene	191-24-2	D	2	1	1.61E-01	1.61E-01		2.30E+03	NC	7.0E-05
A027	SVOC	Benzo(k)fluoranthene	207-08-9	B2	2	1	9.90E-02	9.90E-02		6.20E+01	C	1.6E-03
A027	SVOC	Biphenyl	92-52-4	D	2	1	1.98E-02	1.98E-02		3.00E+03	NC	6.6E-06
A027	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	2	1	5.65E-02	5.65E-02		3.50E+02	C	1.6E-04
A027	SVOC	Carbazole	86-74-8	B2	2	1	2.45E-02	2.45E-02		2.40E+02	C	1.0E-04
A027	SVOC	Chrysene	218-01-9	B2	2	1	2.75E-01	2.75E-01		6.20E+02	C	4.4E-04
A027	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	2	1	2.90E-02	2.90E-02		6.20E-01	C	4.7E-02
A027	SVOC	Dibenzofuran	132-64-9	D	2	1	2.23E-02	2.23E-02		2.90E+02	NC	7.7E-05
A027	SVOC	Fluoranthene	206-44-0	D	2	1	3.55E-01	3.55E-01		2.30E+03	NC	1.5E-04
A027	SVOC	Fluorene	86-73-7	D	2	1	3.09E-02	3.09E-02		2.70E+03	NC	1.1E-05
A027	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	2	1	9.50E-02	9.50E-02		6.20E+00	C	1.5E-02
A027	SVOC	2-Methylnaphthalene	91-57-6	ID	2	1	2.98E-02	2.98E-02		5.60E+01	NC	5.3E-04
A027	SVOC	Methylphenol (total)	1319-77-3		2	1	2.50E-02	2.50E-02		3.10E+02	NC	8.1E-05
A027	SVOC	Naphthalene	91-20-3	C	2	1	4.88E-02	4.88E-02		5.60E+01	NC	8.7E-04
A027	SVOC	Phenanthrene	85-01-8	D	2	1	2.03E-01	2.03E-01		2.30E+03	NC	8.8E-05
A027	SVOC	Pyrene	129-00-0	D	2	1	3.20E-01	3.20E-01		2.30E+03	NC	1.4E-04
A027	P/PCB	PCBs (total)	1336-36-3	B2	2	2	1.27E-01	3.92E+00		2.00E+00	C	2.0E+00
A027	INORG	Aluminum	7429-90-5	D	2	2	1.24E+04	1.41E+04	1.48E+04	7.60E+04	NC	
A027	INORG	Antimony	7440-36-0		2	1	2.95E-01	2.95E-01	4.40E-01	3.10E+01	NC	

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A027	INORG	Arsenic	7440-38-2	A	2	2	9.05E+00	9.20E+00	1.13E+01	3.90E+00	C
A027	INORG	Barium	7440-39-3	D	2	2	4.47E+01	1.20E+02	8.38E+01	5.40E+03	NC
A027	INORG	Cadmium	7440-43-9	B1	2	1	1.14E+00	1.14E+00	5.52E-01	3.70E+01	NC
A027	INORG	Chromium (total)	7440-47-3		2	2	1.86E+01	2.20E+01	2.82E+01	2.20E+02	NC
A027	INORG	Cobalt	7440-48-4	B1	2	2	4.60E+00	8.90E+00	1.00E+01	1.40E+03	NC
A027	INORG	Copper	7440-50-8	D	2	2	1.14E+01	1.34E+02	1.89E+01	3.10E+03	NC
A027	INORG	Iron	7439-89-6	D	2	2	1.99E+04	2.21E+04	2.44E+04	2.30E+04	NC
A027	INORG	Lead	7439-92-1	B2	2	2	1.76E+01	7.22E+01	2.00E+01	4.00E+02	NC
A027	INORG	Manganese	7439-96-5	D	2	2	1.92E+02	4.51E+02	6.76E+02	1.80E+03	NC
A027	INORG	Mercury	7439-97-6	D	2	2	3.80E-02	1.45E-01	7.05E-02	3.67E+00	NC
A027	INORG	Nickel	7440-02-0	A	2	2	8.90E+00	2.40E+01	1.83E+01	1.60E+03	NC
A027	INORG	Vanadium	7440-62-2		2	2	2.84E+01	3.23E+01	4.18E+01	5.50E+02	NC
A027	INORG	Zinc	7440-66-6	D	2	2	2.51E+01	3.83E+02	5.48E+01	2.30E+04	NC
P002	VOC	Acetone	67-64-1	ID	2	1	7.70E-03	7.70E-03		1.60E+03	NC
P002	VOC	Ethyl Benzene	100-41-4	D	2	1	6.90E-04	6.90E-04		1.90E+03	NC
P002	VOC	Methyl Acetate	79-20-9		2	1	6.40E-02	6.40E-02		2.20E+04	NC
P002	VOC	Methylene Chloride	75-09-2	B2	2	1	1.40E-03	1.40E-03		9.10E+01	C
P002	VOC	Toluene	108-88-3	D	2	1	1.00E-03	1.00E-03		6.60E+02	NC
P002	P/PCB	PCBs (total)	1336-36-3	B2	38	21	6.80E-02	5.05E+01		2.00E+00	C
P002	INORG	Aluminum	7429-90-5	D	2	2	4.86E+01	3.04E+04	1.48E+04	7.60E+04	NC
P002	INORG	Arsenic	7440-38-2	A	2	2	1.60E+00	9.60E+00	1.13E+01	3.90E+00	C
P002	INORG	Barium	7440-39-3	D	2	2	1.90E+00	9.20E+01	8.38E+01	5.40E+03	NC
P002	INORG	Beryllium	7440-41-7	B1	2	1	8.70E-01	8.70E-01	5.70E-01	1.50E+02	NC
P002	INORG	Cadmium	7440-43-9	B1	2	2	3.00E-01	3.20E+00	5.52E-01	3.70E+01	NC
P002	INORG	Chromium (total)	7440-47-3		2	2	4.10E+00	4.04E+01	2.82E+01	2.20E+02	NC
P002	INORG	Cobalt	7440-48-4	B1	2	1	1.17E+01	1.17E+01	1.00E+01	1.40E+03	NC
P002	INORG	Copper	7440-50-8	D	2	2	1.20E+00	8.36E+02	1.89E+01	3.10E+03	NC
P002	INORG	Iron	7439-89-6	D	2	2	1.12E+03	2.66E+04	2.44E+04	2.30E+04	NC
P002	INORG	Lead	7439-92-1	B2	2	1	8.93E+01	8.93E+01	2.00E+01	4.00E+02	NC
P002	INORG	Manganese	7439-96-5	D	2	2	5.21E+01	4.83E+02	6.76E+02	1.80E+03	NC
P002	INORG	Mercury	7439-97-6	D	2	1	9.00E-02	9.00E-02	7.05E-02	3.67E+00	NC
P002	INORG	Nickel	7440-02-0	A	2	1	5.10E+01	5.10E+01	1.83E+01	1.60E+03	NC
P002	INORG	Selenium	7782-49-2	D	2	1	1.90E+00	1.90E+00	3.96E-01	3.90E+02	NC
P002	INORG	Silver	7440-22-4	D	2	1	3.00E-01	3.00E-01		3.90E+02	NC
P002	INORG	Thallium	7440-28-0		2	1	1.30E+00	1.30E+00	8.40E-01	5.20E+00	NC
P002	INORG	Vanadium	7440-62-2		2	2	1.70E+00	3.35E+01	4.18E+01	5.50E+02	NC
P002	INORG	Zinc	7440-66-6	D	2	2	1.32E+01	8.49E+02	5.48E+01	2.30E+04	NC
P009	P/PCB	PCBs (total)	1336-36-3	B2	2	1	8.72E-02	8.72E-02		2.00E+00	C

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P023	P/PCB	PCBs (total)	1336-36-3	B2	47	44	7.89E-02	5.75E+01		2.00E+00	C 2.9E+01
P024	P/PCB	PCBs (total)	1336-36-3	B2	19	15	7.21E-02	1.02E+02		2.00E+00	C 5.1E+01
P025	P/PCB	PCBs (total)	1336-36-3	B2	41	39	4.69E-02	3.69E+02		2.00E+00	C 1.8E+02
P027	P/PCB	PCBs (total)	1336-36-3	B2	17	5	3.71E-02	8.93E+01		2.00E+00	C 4.5E+01
P028	VOC	Methyl Acetate	79-20-9		3	3	1.06E-02	1.60E-02		2.20E+04	NC 7.3E-07
P028	VOC	Methylcyclohexane	108-87-2		3	1	2.20E-03	2.20E-03		2.60E+03	NC 8.5E-07
P028	VOC	Toluene	108-88-3	D	3	1	9.20E-04	9.20E-04		6.60E+02	NC 1.4E-06
P028	SVOC	Benzo(a)anthracene	56-55-3	B2	3	1	1.20E-01	1.20E-01		6.20E+00	C 1.9E-02
P028	SVOC	Benzo(a)pyrene	50-32-8	B2	3	1	1.50E-01	1.50E-01		6.20E-01	C 2.4E-01
P028	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	1.60E-01	1.60E-01		6.20E+00	C 2.6E-02
P028	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	1	1.30E-01	1.30E-01		2.30E+03	NC 5.7E-05
P028	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	1	9.30E-02	9.30E-02		6.20E+01	C 1.5E-03
P028	SVOC	Chrysene	218-01-9	B2	3	1	1.40E-01	1.40E-01		6.20E+02	C 2.3E-04
P028	SVOC	Fluoranthene	206-44-0	D	3	1	2.30E-01	2.30E-01		2.30E+03	NC 1.0E-04
P028	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	1.10E-01	1.10E-01		6.20E+00	C 1.8E-02
P028	SVOC	Phenanthrene	85-01-8	D	3	1	1.10E-01	1.10E-01		2.30E+03	NC 4.8E-05
P028	SVOC	Pyrene	129-00-0	D	3	1	2.30E-01	2.30E-01		2.30E+03	NC 1.0E-04
P028	P/PCB	PCBs (total)	1336-36-3	B2	60	48	6.30E-02	2.04E+02		2.00E+00	C 1.0E+02
P028	INORG	Aluminum	7429-90-5	D	3	3	5.93E+03	8.94E+03	1.48E+04	7.60E+04	NC
P028	INORG	Arsenic	7440-38-2	A	3	3	6.20E+00	6.70E+00	1.13E+01	3.90E+00	C
P028	INORG	Barium	7440-39-3	D	3	3	6.60E+01	7.36E+01	8.38E+01	5.40E+03	NC
P028	INORG	Beryllium	7440-41-7	B1	3	3	2.90E-01	3.65E-01	5.70E-01	1.50E+02	NC
P028	INORG	Cadmium	7440-43-9	B1	3	3	5.90E-01	6.65E-01	5.52E-01	3.70E+01	NC 3.0E-03
P028	INORG	Chromium (total)	7440-47-3		3	3	1.39E+01	3.89E+01	2.82E+01	2.20E+02	NC 4.9E-02
P028	INORG	Cobalt	7440-48-4	B1	3	3	8.30E+00	2.52E+01	1.00E+01	1.40E+03	NC 1.1E-02
P028	INORG	Copper	7440-50-8	D	3	3	2.27E+01	5.02E+01	1.89E+01	3.10E+03	NC 1.0E-02
P028	INORG	Iron	7439-89-6	D	3	3	1.46E+04	1.57E+04	2.44E+04	2.30E+04	NC
P028	INORG	Lead	7439-92-1	B2	3	3	2.01E+01	2.63E+01	2.00E+01	4.00E+02	NC 1.6E-02
P028	INORG	Manganese	7439-96-5	D	3	3	6.05E+02	8.94E+02	6.76E+02	1.80E+03	NC 1.2E-01
P028	INORG	Mercury	7439-97-6	D	3	3	1.00E-01	2.00E+00	7.05E-02	3.67E+00	NC 5.3E-01
P028	INORG	Nickel	7440-02-0	A	3	3	1.65E+01	6.14E+01	1.83E+01	1.60E+03	NC 2.7E-02
P028	INORG	Selenium	7782-49-2	D	3	1	4.40E-01	4.40E-01	3.96E-01	3.90E+02	NC 1.1E-04
P028	INORG	Silver	7440-22-4	D	3	2	4.30E-01	7.00E-01		3.90E+02	NC 1.8E-03
P028	INORG	Vanadium	7440-62-2		3	3	1.94E+01	2.22E+01	4.18E+01	5.50E+02	NC
P028	INORG	Zinc	7440-66-6	D	3	3	8.13E+01	1.11E+02	5.48E+01	2.30E+04	NC 2.4E-03
P029	P/PCB	PCBs (total)	1336-36-3	B2	3	3	2.00E-01	8.74E+00		2.00E+00	C 4.4E+00
P030	VOC	Methyl Acetate	79-20-9		3	3	9.50E-03	1.00E-02		2.20E+04	NC 4.5E-07
P030	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	9.70E-02	9.70E-02		6.20E+00	C 1.6E-02

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P030	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	8.70E-02	8.70E-02		3.50E+02 C	2.5E-04
P030	SVOC	Chrysene	218-01-9	B2	3	1	8.50E-02	8.50E-02		6.20E+02 C	1.4E-04
P030	SVOC	Fluoranthene	206-44-0	D	3	1	1.30E-01	1.30E-01		2.30E+03 NC	5.7E-05
P030	SVOC	Pyrene	129-00-0	D	3	1	1.40E-01	1.40E-01		2.30E+03 NC	6.1E-05
P030	P/PCB	PCBs (total)	1336-36-3	B2	83	50	4.20E-02	1.65E+02		2.00E+00 C	8.2E+01
P030	INORG	Aluminum	7429-90-5	D	3	3	6.61E+03	9.86E+03	1.48E+04	7.60E+04 NC	
P030	INORG	Arsenic	7440-38-2	A	3	3	5.60E+00	6.90E+00	1.13E+01	3.90E+00 C	
P030	INORG	Barium	7440-39-3	D	3	3	6.86E+01	9.17E+01	8.38E+01	5.40E+03 NC	1.5E-03
P030	INORG	Beryllium	7440-41-7	B1	3	3	3.20E-01	4.20E-01	5.70E-01	1.50E+02 NC	
P030	INORG	Cadmium	7440-43-9	B1	3	3	6.90E-01	7.90E-01	5.52E-01	3.70E+01 NC	6.4E-03
P030	INORG	Chromium (total)	7440-47-3		3	3	1.43E+01	1.78E+01	2.82E+01	2.20E+02 NC	
P030	INORG	Cobalt	7440-48-4	B1	3	3	1.03E+01	1.16E+01	1.00E+01	1.40E+03 NC	1.1E-03
P030	INORG	Copper	7440-50-8	D	3	3	1.34E+01	3.74E+01	1.89E+01	3.10E+03 NC	6.0E-03
P030	INORG	Iron	7439-89-6	D	3	3	1.29E+04	1.75E+04	2.44E+04	2.30E+04 NC	
P030	INORG	Lead	7439-92-1	B2	3	3	1.48E+01	2.09E+01	2.00E+01	4.00E+02 NC	2.2E-03
P030	INORG	Manganese	7439-96-5	D	3	3	8.17E+02	1.19E+03	6.76E+02	1.80E+03 NC	2.9E-01
P030	INORG	Mercury	7439-97-6	D	3	2	2.20E-01	2.80E-01	7.05E-02	3.67E+00 NC	5.7E-02
P030	INORG	Nickel	7440-02-0	A	3	3	1.63E+01	1.86E+01	1.83E+01	1.60E+03 NC	1.8E-04
P030	INORG	Selenium	7782-49-2	D	3	1	5.60E-01	5.60E-01	3.96E-01	3.90E+02 NC	4.2E-04
P030	INORG	Silver	7440-22-4	D	3	1	2.20E-01	2.20E-01		3.90E+02 NC	5.6E-04
P030	INORG	Vanadium	7440-62-2		3	3	1.79E+01	2.42E+01	4.18E+01	5.50E+02 NC	
P030	INORG	Zinc	7440-66-6	D	3	3	6.54E+01	8.94E+01	5.48E+01	2.30E+04 NC	1.5E-03
P036	P/PCB	PCBs (total)	1336-36-3	B2	73	59	6.75E-02	8.28E+01		2.00E+00 C	4.1E+01
P036	INORG	Aluminum	7429-90-5	D	4	4	8.70E+03	9.35E+03	1.48E+04	7.60E+04 NC	
P036	INORG	Arsenic	7440-38-2	A	4	4	6.60E+00	6.80E+00	1.13E+01	3.90E+00 C	
P036	INORG	Barium	7440-39-3	D	4	4	8.09E+01	8.67E+01	8.38E+01	5.40E+03 NC	5.4E-04
P036	INORG	Beryllium	7440-41-7	B1	4	4	6.20E-01	6.70E-01	5.70E-01	1.50E+02 NC	6.7E-04
P036	INORG	Cadmium	7440-43-9	B1	4	4	3.90E-01	4.80E-01	5.52E-01	3.70E+01 NC	
P036	INORG	Chromium (total)	7440-47-3		4	4	1.33E+01	1.40E+01	2.82E+01	2.20E+02 NC	
P036	INORG	Cobalt	7440-48-4	B1	4	4	9.50E+00	9.80E+00	1.00E+01	1.40E+03 NC	
P036	INORG	Copper	7440-50-8	D	4	4	1.51E+01	1.83E+01	1.89E+01	3.10E+03 NC	
P036	INORG	Iron	7439-89-6	D	4	4	1.59E+04	1.69E+04	2.44E+04	2.30E+04 NC	
P036	INORG	Lead	7439-92-1	B2	4	4	1.63E+01	1.84E+01	2.00E+01	4.00E+02 NC	
P036	INORG	Manganese	7439-96-5	D	4	4	7.77E+02	9.19E+02	6.76E+02	1.80E+03 NC	1.3E-01
P036	INORG	Mercury	7439-97-6	D	4	1	1.10E-01	1.10E-01	7.05E-02	3.67E+00 NC	1.1E-02
P036	INORG	Nickel	7440-02-0	A	4	4	1.51E+01	1.56E+01	1.83E+01	1.60E+03 NC	
P036	INORG	Selenium	7782-49-2	D	4	2	5.30E-01	6.90E-01	3.96E-01	3.90E+02 NC	7.5E-04
P036	INORG	Vanadium	7440-62-2		4	4	2.23E+01	2.37E+01	4.18E+01	5.50E+02 NC	

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P036	INORG	Zinc	7440-66-6	D	4	4	6.48E+01	7.43E+01	5.48E+01	2.30E+04 NC	8.5E-04
P037/P237	P/PCB	PCBs (total)	1336-36-3	B2	26	22	7.50E-02	6.35E+01		2.00E+00 C	3.2E+01
P037/P237	INORG	Aluminum	7429-90-5	D	1	1	9.35E+03	9.35E+03	1.48E+04	7.60E+04 NC	
P037/P237	INORG	Arsenic	7440-38-2	A	1	1	6.70E+00	6.70E+00	1.13E+01	3.90E+00 C	
P037/P237	INORG	Barium	7440-39-3	D	1	1	8.52E+01	8.52E+01	8.38E+01	5.40E+03 NC	2.6E-04
P037/P237	INORG	Beryllium	7440-41-7	B1	1	1	6.40E-01	6.40E-01	5.70E-01	1.50E+02 NC	4.7E-04
P037/P237	INORG	Cadmium	7440-43-9	B1	1	1	3.90E-01	3.90E-01	5.52E-01	3.70E+01 NC	
P037/P237	INORG	Chromium (total)	7440-47-3		1	1	1.34E+01	1.34E+01	2.82E+01	2.20E+02 NC	
P037/P237	INORG	Cobalt	7440-48-4	B1	1	1	9.50E+00	9.50E+00	1.00E+01	1.40E+03 NC	
P037/P237	INORG	Copper	7440-50-8	D	1	1	1.51E+01	1.51E+01	1.89E+01	3.10E+03 NC	
P037/P237	INORG	Iron	7439-89-6	D	1	1	1.65E+04	1.65E+04	2.44E+04	2.30E+04 NC	
P037/P237	INORG	Lead	7439-92-1	B2	1	1	1.63E+01	1.63E+01	2.00E+01	4.00E+02 NC	
P037/P237	INORG	Manganese	7439-96-5	D	1	1	8.90E+02	8.90E+02	6.76E+02	1.80E+03 NC	1.2E-01
P037/P237	INORG	Nickel	7440-02-0	A	1	1	1.51E+01	1.51E+01	1.83E+01	1.60E+03 NC	
P037/P237	INORG	Vanadium	7440-62-2		1	1	2.35E+01	2.35E+01	4.18E+01	5.50E+02 NC	
P037/P237	INORG	Zinc	7440-66-6	D	1	1	6.48E+01	6.48E+01	5.48E+01	2.30E+04 NC	4.4E-04
P038	VOC	Methyl Acetate	79-20-9		1	1	2.40E-02	2.40E-02		2.20E+04 NC	1.1E-06
P038	VOC	Toluene	108-88-3	D	1	1	1.80E-03	1.80E-03		6.60E+02 NC	2.7E-06
P038	P/PCB	PCBs (total)	1336-36-3	B2	33	24	7.39E-02	5.00E+02		2.00E+00 C	2.5E+02
P038	INORG	Aluminum	7429-90-5	D	1	1	1.09E+04	1.09E+04	1.48E+04	7.60E+04 NC	
P038	INORG	Arsenic	7440-38-2	A	1	1	7.30E+00	7.30E+00	1.13E+01	3.90E+00 C	
P038	INORG	Barium	7440-39-3	D	1	1	9.65E+01	9.65E+01	8.38E+01	5.40E+03 NC	2.4E-03
P038	INORG	Beryllium	7440-41-7	B1	1	1	7.80E-01	7.80E-01	5.70E-01	1.50E+02 NC	1.4E-03
P038	INORG	Cadmium	7440-43-9	B1	1	1	6.60E-01	6.60E-01	5.52E-01	3.70E+01 NC	2.9E-03
P038	INORG	Chromium (total)	7440-47-3		1	1	1.64E+01	1.64E+01	2.82E+01	2.20E+02 NC	
P038	INORG	Cobalt	7440-48-4	B1	1	1	9.40E+00	9.40E+00	1.00E+01	1.40E+03 NC	
P038	INORG	Copper	7440-50-8	D	1	1	1.72E+01	1.72E+01	1.89E+01	3.10E+03 NC	
P038	INORG	Cyanide (amenable)	57-12-5A		1	1	7.90E-01	7.90E-01		1.20E+03 NC	6.6E-04
P038	INORG	Iron	7439-89-6	D	1	1	1.86E+04	1.86E+04	2.44E+04	2.30E+04 NC	
P038	INORG	Lead	7439-92-1	B2	1	1	1.98E+01	1.98E+01	2.00E+01	4.00E+02 NC	
P038	INORG	Manganese	7439-96-5	D	1	1	7.06E+02	7.06E+02	6.76E+02	1.80E+03 NC	1.6E-02
P038	INORG	Mercury	7439-97-6	D	1	1	1.10E-01	1.10E-01	7.05E-02	3.67E+00 NC	1.1E-02
P038	INORG	Nickel	7440-02-0	A	1	1	1.67E+01	1.67E+01	1.83E+01	1.60E+03 NC	
P038	INORG	Selenium	7782-49-2	D	1	1	6.60E-01	6.60E-01	3.96E-01	3.90E+02 NC	6.8E-04
P038	INORG	Vanadium	7440-62-2		1	1	2.78E+01	2.78E+01	4.18E+01	5.50E+02 NC	
P038	INORG	Zinc	7440-66-6	D	1	1	7.52E+01	7.52E+01	5.48E+01	2.30E+04 NC	8.9E-04
P039	VOC	Methyl Acetate	79-20-9		2	2	8.40E-03	2.90E-01		2.20E+04 NC	1.3E-05
P039	VOC	Methylcyclohexane	108-87-2		2	1	6.50E-03	6.50E-03		2.60E+03 NC	2.5E-06

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P039	VOC	Toluene	108-88-3	D	2	1	5.25E-03	5.25E-03		6.60E+02	NC	8.0E-06
P039	P/PCB	PCBs (total)	1336-36-3	B2	368	259	4.29E-02	3.52E+02		2.00E+00	C	1.8E+02
P039	INORG	Aluminum	7429-90-5	D	2	2	8.96E+03	1.08E+04	1.48E+04	7.60E+04	NC	
P039	INORG	Arsenic	7440-38-2	A	2	2	6.15E+00	7.30E+00	1.13E+01	3.90E+00	C	
P039	INORG	Barium	7440-39-3	D	2	2	8.74E+01	9.77E+01	8.38E+01	5.40E+03	NC	2.6E-03
P039	INORG	Beryllium	7440-41-7	B1	2	2	6.35E-01	7.20E-01	5.70E-01	1.50E+02	NC	1.0E-03
P039	INORG	Cadmium	7440-43-9	B1	2	2	6.80E-01	7.00E-01	5.52E-01	3.70E+01	NC	4.0E-03
P039	INORG	Chromium (total)	7440-47-3		2	2	1.67E+01	1.77E+01	2.82E+01	2.20E+02	NC	
P039	INORG	Cobalt	7440-48-4	B1	2	2	1.16E+01	1.22E+01	1.00E+01	1.40E+03	NC	1.5E-03
P039	INORG	Copper	7440-50-8	D	2	2	2.39E+01	2.64E+01	1.89E+01	3.10E+03	NC	2.4E-03
P039	INORG	Cyanide (amenable)	57-12-5A		2	1	7.10E-01	7.10E-01		1.20E+03	NC	5.9E-04
P039	INORG	Iron	7439-89-6	D	2	2	1.63E+04	1.85E+04	2.44E+04	2.30E+04	NC	
P039	INORG	Lead	7439-92-1	B2	2	2	2.18E+01	2.46E+01	2.00E+01	4.00E+02	NC	1.1E-02
P039	INORG	Manganese	7439-96-5	D	2	2	9.20E+02	9.80E+02	6.76E+02	1.80E+03	NC	1.7E-01
P039	INORG	Mercury	7439-97-6	D	2	2	1.75E-01	2.20E-01	7.05E-02	3.67E+00	NC	4.1E-02
P039	INORG	Nickel	7440-02-0	A	2	2	1.81E+01	1.88E+01	1.83E+01	1.60E+03	NC	3.1E-04
P039	INORG	Selenium	7782-49-2	D	2	2	6.20E-01	7.70E-01	3.96E-01	3.90E+02	NC	9.6E-04
P039	INORG	Silver	7440-22-4	D	2	1	3.45E-01	3.45E-01		3.90E+02	NC	8.8E-04
P039	INORG	Vanadium	7440-62-2		2	2	2.22E+01	2.62E+01	4.18E+01	5.50E+02	NC	
P039	INORG	Zinc	7440-66-6	D	2	2	1.02E+02	1.03E+02	5.48E+01	2.30E+04	NC	2.1E-03
P040	VOC	Methyl Acetate	79-20-9		8	8	6.40E-03	4.00E-02		2.20E+04	NC	1.8E-06
P040	VOC	Methylcyclohexane	108-87-2		8	4	8.80E-04	1.50E-03		2.60E+03	NC	5.8E-07
P040	VOC	Toluene	108-88-3	D	8	3	8.30E-04	1.40E-03		6.60E+02	NC	2.1E-06
P040	P/PCB	PCBs (total)	1336-36-3	B2	90	78	5.63E-02	9.04E+00		2.00E+00	C	4.5E+00
P040	INORG	Aluminum	7429-90-5	D	8	8	7.77E+03	1.11E+04	1.48E+04	7.60E+04	NC	
P040	INORG	Arsenic	7440-38-2	A	8	8	6.00E+00	7.80E+00	1.13E+01	3.90E+00	C	
P040	INORG	Barium	7440-39-3	D	8	8	7.52E+01	1.07E+02	8.38E+01	5.40E+03	NC	4.3E-03
P040	INORG	Beryllium	7440-41-7	B1	8	8	6.10E-01	8.80E-01	5.70E-01	1.50E+02	NC	2.1E-03
P040	INORG	Cadmium	7440-43-9	B1	8	8	4.20E-01	6.30E-01	5.52E-01	3.70E+01	NC	2.1E-03
P040	INORG	Chromium (total)	7440-47-3		8	8	1.16E+01	1.63E+01	2.82E+01	2.20E+02	NC	
P040	INORG	Cobalt	7440-48-4	B1	8	8	7.90E+00	1.03E+01	1.00E+01	1.40E+03	NC	1.8E-04
P040	INORG	Copper	7440-50-8	D	8	8	1.21E+01	1.86E+01	1.89E+01	3.10E+03	NC	
P040	INORG	Iron	7439-89-6	D	8	8	1.48E+04	2.02E+04	2.44E+04	2.30E+04	NC	
P040	INORG	Lead	7439-92-1	B2	8	8	1.57E+01	1.86E+01	2.00E+01	4.00E+02	NC	
P040	INORG	Manganese	7439-96-5	D	8	8	7.18E+02	9.50E+02	6.76E+02	1.80E+03	NC	1.5E-01
P040	INORG	Mercury	7439-97-6	D	8	8	3.70E-02	8.80E-02	7.05E-02	3.67E+00	NC	4.8E-03
P040	INORG	Nickel	7440-02-0	A	8	8	1.25E+01	1.79E+01	1.83E+01	1.60E+03	NC	
P040	INORG	Selenium	7782-49-2	D	8	5	4.70E-01	6.30E-01	3.96E-01	3.90E+02	NC	6.0E-04

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P040	INORG	Silver	7440-22-4	D	8	1	2.00E-01	2.00E-01		3.90E+02	NC	5.1E-04
P040	INORG	Vanadium	7440-62-2		8	8	2.03E+01	2.88E+01	4.18E+01	5.50E+02	NC	
P040	INORG	Zinc	7440-66-6	D	8	8	5.92E+01	7.50E+01	5.48E+01	2.30E+04	NC	8.8E-04
P041	P/PCB	PCBs (total)	1336-36-3	B2	4	3	8.32E-02	2.45E-01		2.00E+00	C	1.2E-01
P042	P/PCB	PCBs (total)	1336-36-3	B2	2	2	8.35E-02	2.76E-01		2.00E+00	C	1.4E-01
P044	P/PCB	PCBs (total)	1336-36-3	B2	4	3	8.35E-02	2.76E-01		2.00E+00	C	1.4E-01
P045	P/PCB	PCBs (total)	1336-36-3	B2	6	1	2.07E-01	2.07E-01		2.00E+00	C	1.0E-01
P057	P/PCB	PCBs (total)	1336-36-3	B2	13	11	7.14E-02	2.58E+00		2.00E+00	C	1.3E+00
P058	P/PCB	PCBs (total)	1336-36-3	B2	2	1	1.75E-01	1.75E-01		2.00E+00	C	8.8E-02
P060	P/PCB	PCBs (total)	1336-36-3	B2	2	2	1.64E-01	6.59E-01		2.00E+00	C	3.3E-01
P061	P/PCB	PCBs (total)	1336-36-3	B2	2	2	7.89E-02	8.16E-02		2.00E+00	C	4.1E-02
P062/P063	P/PCB	PCBs (total)	1336-36-3	B2	3	2	4.57E-02	1.66E+00		2.00E+00	C	8.3E-01
P064	P/PCB	PCBs (total)	1336-36-3	B2	4	4	9.92E-02	5.28E-01		2.00E+00	C	2.6E-01
P066	P/PCB	PCBs (total)	1336-36-3	B2	2	2	2.84E-01	2.90E-01		2.00E+00	C	1.5E-01
P069	P/PCB	PCBs (total)	1336-36-3	B2	4	4	1.10E-01	2.17E-01		2.00E+00	C	1.1E-01
P072	P/PCB	PCBs (total)	1336-36-3	B2	11	4	1.11E-01	4.58E+00		2.00E+00	C	2.3E+00
P074	P/PCB	PCBs (total)	1336-36-3	B2	10	6	7.17E-02	2.60E-01		2.00E+00	C	1.3E-01
P075	P/PCB	PCBs (total)	1336-36-3	B2	8	2	6.82E-02	9.06E-02		2.00E+00	C	4.5E-02
P076(GM)	P/PCB	PCBs (total)	1336-36-3	B2	22	17	1.17E-01	5.53E+01		2.00E+00	C	2.8E+01
P078	P/PCB	PCBs (total)	1336-36-3	B2	13	12	7.21E-02	1.02E+02		2.00E+00	C	5.1E+01
P081	P/PCB	PCBs (total)	1336-36-3	B2	12	10	8.27E-02	2.17E+00		2.00E+00	C	1.1E+00
P202/P203/P204	P/PCB	PCBs (total)	1336-36-3	B2	7	5	8.12E-02	4.77E+00		2.00E+00	C	2.4E+00
P207	P/PCB	PCBs (total)	1336-36-3	B2	9	1	1.63E-01	1.63E-01		2.00E+00	C	8.2E-02
P208	P/PCB	PCBs (total)	1336-36-3	B2	22	7	3.86E-02	1.74E+00		2.00E+00	C	8.7E-01
P209/P210	P/PCB	PCBs (total)	1336-36-3	B2	8	2	1.31E-01	1.90E-01		2.00E+00	C	9.5E-02
P211/P212	P/PCB	PCBs (total)	1336-36-3	B2	19	4	4.00E-02	7.30E-02		2.00E+00	C	3.7E-02
P213(GM)	P/PCB	PCBs (total)	1336-36-3	B2	29	3	6.78E-02	7.05E-02		2.00E+00	C	3.5E-02
P213(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.19E+04	1.19E+04	1.48E+04	7.60E+04	NC	
P213(GM)	INORG	Arsenic	7440-38-2	A	1	1	8.10E+00	8.10E+00	1.13E+01	3.90E+00	C	
P213(GM)	INORG	Barium	7440-39-3	D	1	1	8.80E+01	8.80E+01	8.38E+01	5.40E+03	NC	7.8E-04
P213(GM)	INORG	Beryllium	7440-41-7	B1	1	1	3.80E-01	3.80E-01	5.70E-01	1.50E+02	NC	
P213(GM)	INORG	Cadmium	7440-43-9	B1	1	1	4.60E-01	4.60E-01	5.52E-01	3.70E+01	NC	
P213(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.44E+01	1.44E+01	2.82E+01	2.20E+02	NC	
P213(GM)	INORG	Cobalt	7440-48-4	B1	1	1	9.10E+00	9.10E+00	1.00E+01	1.40E+03	NC	
P213(GM)	INORG	Copper	7440-50-8	D	1	1	1.06E+01	1.06E+01	1.89E+01	3.10E+03	NC	
P213(GM)	INORG	Iron	7439-89-6	D	1	1	1.68E+04	1.68E+04	2.44E+04	2.30E+04	NC	
P213(GM)	INORG	Lead	7439-92-1	B2	1	1	1.39E+01	1.39E+01	2.00E+01	4.00E+02	NC	
P213(GM)	INORG	Manganese	7439-96-5	D	1	1	8.72E+02	8.72E+02	6.76E+02	1.80E+03	NC	1.1E-01

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P213(GM)	INORG	Mercury	7439-97-6	D	1	1	4.40E-02	4.40E-02	7.05E-02	3.67E+00	NC
P213(GM)	INORG	Nickel	7440-02-0	A	1	1	1.22E+01	1.22E+01	1.83E+01	1.60E+03	NC
P213(GM)	INORG	Thallium	7440-28-0		1	1	9.70E-01	9.70E-01	8.40E-01	5.20E+00	NC
P213(GM)	INORG	Vanadium	7440-62-2		1	1	2.62E+01	2.62E+01	4.18E+01	5.50E+02	NC
P213(GM)	INORG	Zinc	7440-66-6	D	1	1	4.85E+01	4.85E+01	5.48E+01	2.30E+04	NC
P217	VOC	Acetone	67-64-1	ID	20	1	2.80E-03	2.80E-03		1.60E+03	NC
P217	VOC	Methyl Acetate	79-20-9		20	6	1.30E-03	1.08E-02		2.20E+04	NC
P217	VOC	4-Methyl-2-pentanone	108-10-1	ID	20	1	2.70E-03	2.70E-03		7.90E+02	NC
P217	VOC	Methylcyclohexane	108-87-2		20	1	8.30E-04	8.30E-04		2.60E+03	NC
P217	VOC	Toluene	108-88-3	D	20	1	8.10E-02	8.10E-02		6.60E+02	NC
P217	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		20	2	1.80E-03	2.00E-03		2.10E+04	NC
P217	VOC	Xylenes (total)	1330-20-7	ID	20	1	1.80E-01	1.80E-01		2.80E+02	NC
P217	SVOC	Hexachlorobutadiene	87-68-3	C	21	1	4.80E-01	4.80E-01		1.80E+01	NC
P217	SVOC	2-Methylnaphthalene	91-57-6	ID	21	1	4.50E+00	4.50E+00		5.60E+01	NC
P217	SVOC	Phenanthrene	85-01-8	D	21	1	1.10E-01	1.10E-01		2.30E+03	NC
P217	P/PCB	PCBs (total)	1336-36-3	B2	21	8	5.01E-02	3.91E-01		2.00E+00	C
P217	INORG	Aluminum	7429-90-5	D	21	21	8.81E+03	2.87E+05	1.48E+04	7.60E+04	NC
P217	INORG	Antimony	7440-36-0		21	3	1.10E+00	1.50E+00	4.40E-01	3.10E+01	NC
P217	INORG	Arsenic	7440-38-2	A	21	21	2.60E+00	1.83E+01	1.13E+01	3.90E+00	C
P217	INORG	Barium	7440-39-3	D	21	21	6.00E+00	1.27E+02	8.38E+01	5.40E+03	NC
P217	INORG	Beryllium	7440-41-7	B1	21	15	2.00E-01	1.02E+00	5.70E-01	1.50E+02	NC
P217	INORG	Cadmium	7440-43-9	B1	21	8	2.40E-02	2.04E+01	5.52E-01	3.70E+01	NC
P217	INORG	Chromium (total)	7440-47-3		21	21	1.18E+01	1.08E+03	2.82E+01	2.20E+02	NC
P217	INORG	Cobalt	7440-48-4	B1	21	21	7.10E+00	1.90E+01	1.00E+01	1.40E+03	NC
P217	INORG	Copper	7440-50-8	D	21	21	1.04E+01	8.52E+04	1.89E+01	3.10E+03	NC
P217	INORG	Cyanide (total)	57-12-5	D	21	1	1.80E-01	1.80E-01		1.20E+03	NC
P217	INORG	Iron	7439-89-6	D	21	21	1.04E+04	4.66E+04	2.44E+04	2.30E+04	NC
P217	INORG	Lead	7439-92-1	B2	21	21	1.42E+01	3.83E+02	2.00E+01	4.00E+02	NC
P217	INORG	Manganese	7439-96-5	D	21	21	2.88E+02	3.15E+03	6.76E+02	1.80E+03	NC
P217	INORG	Mercury	7439-97-6	D	21	20	2.50E-02	1.30E+00	7.05E-02	3.67E+00	NC
P217	INORG	Nickel	7440-02-0	A	21	21	1.00E+01	1.64E+02	1.83E+01	1.60E+03	NC
P217	INORG	Selenium	7782-49-2	D	21	8	3.13E-01	3.80E+00	3.96E-01	3.90E+02	NC
P217	INORG	Silver	7440-22-4	D	21	2	3.60E+00	1.36E+01		3.90E+02	NC
P217	INORG	Thallium	7440-28-0		21	8	6.45E-01	4.70E+00	8.40E-01	5.20E+00	NC
P217	INORG	Vanadium	7440-62-2		21	21	2.22E+01	1.09E+02	4.18E+01	5.50E+02	NC
P217	INORG	Zinc	7440-66-6	D	21	21	3.98E+01	2.73E+04	5.48E+01	2.30E+04	NC
P224	P/PCB	PCBs (total)	1336-36-3	B2	3	2	2.16E-01	4.45E-01		2.00E+00	C
P225/P226	P/PCB	PCBs (total)	1336-36-3	B2	7	6	6.08E-02	2.10E-01		2.00E+00	C

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P292	P/PCB	PCBs (total)	1336-36-3	B2	10	3	3.58E-02	5.86E-02		2.00E+00	C 2.9E-02
P333	P/PCB	PCBs (total)	1336-36-3	B2	6	1	3.95E-02	3.95E-02		2.00E+00	C 2.0E-02
P336	P/PCB	PCBs (total)	1336-36-3	B2	7	3	5.81E-02	1.19E-01		2.00E+00	C 5.9E-02
P357	P/PCB	PCBs (total)	1336-36-3	B2	1	1	3.25E-01	3.25E-01		2.00E+00	C 1.6E-01
P358/P359	P/PCB	PCBs (total)	1336-36-3	B2	3	2	2.16E-01	4.45E-01		2.00E+00	C 2.2E-01
P360/P361	P/PCB	PCBs (total)	1336-36-3	B2	4	1	4.10E-02	4.10E-02		2.00E+00	C 2.0E-02
P362	P/PCB	PCBs (total)	1336-36-3	B2	5	2	9.12E-02	1.09E-01		2.00E+00	C 5.5E-02
P364	P/PCB	PCBs (total)	1336-36-3	B2	11	11	4.22E-02	1.36E+01		2.00E+00	C 6.8E+00
P365	P/PCB	PCBs (total)	1336-36-3	B2	5	2	7.94E-02	1.85E-01		2.00E+00	C 9.3E-02
P367	P/PCB	PCBs (total)	1336-36-3	B2	4	2	6.93E-02	7.00E-02		2.00E+00	C 3.5E-02
P368	P/PCB	PCBs (total)	1336-36-3	B2	6	4	5.50E-02	1.20E-01		2.00E+00	C 6.0E-02
P374/P375	P/PCB	PCBs (total)	1336-36-3	B2	6	3	5.50E-02	1.37E-01		2.00E+00	C 6.9E-02
P377	P/PCB	PCBs (total)	1336-36-3	B2	6	4	4.60E-02	8.24E-02		2.00E+00	C 4.1E-02
P380	P/PCB	PCBs (total)	1336-36-3	B2	5	5	5.80E-02	3.95E-01		2.00E+00	C 2.0E-01
P382	VOC	Cumene	98-82-8	D	1	1	4.10E-02	4.10E-02		5.70E+02	NC 7.2E-05
P382	VOC	Methyl Acetate	79-20-9		1	1	1.90E-01	1.90E-01		2.20E+04	NC 8.6E-06
P382	P/PCB	PCBs (total)	1336-36-3	B2	1	1	1.27E-01	1.27E-01		2.00E+00	C 6.4E-02
P382	INORG	Aluminum	7429-90-5	D	1	1	1.24E+04	1.24E+04	1.48E+04	7.60E+04	NC
P382	INORG	Arsenic	7440-38-2	A	1	1	9.20E+00	9.20E+00	1.13E+01	3.90E+00	C
P382	INORG	Barium	7440-39-3	D	1	1	4.47E+01	4.47E+01	8.38E+01	5.40E+03	NC
P382	INORG	Chromium (total)	7440-47-3		1	1	1.86E+01	1.86E+01	2.82E+01	2.20E+02	NC
P382	INORG	Cobalt	7440-48-4	B1	1	1	4.60E+00	4.60E+00	1.00E+01	1.40E+03	NC
P382	INORG	Copper	7440-50-8	D	1	1	1.14E+01	1.14E+01	1.89E+01	3.10E+03	NC
P382	INORG	Iron	7439-89-6	D	1	1	2.21E+04	2.21E+04	2.44E+04	2.30E+04	NC
P382	INORG	Lead	7439-92-1	B2	1	1	1.76E+01	1.76E+01	2.00E+01	4.00E+02	NC
P382	INORG	Manganese	7439-96-5	D	1	1	1.92E+02	1.92E+02	6.76E+02	1.80E+03	NC
P382	INORG	Mercury	7439-97-6	D	1	1	3.80E-02	3.80E-02	7.05E-02	3.67E+00	NC
P382	INORG	Nickel	7440-02-0	A	1	1	8.90E+00	8.90E+00	1.83E+01	1.60E+03	NC
P382	INORG	Vanadium	7440-62-2		1	1	3.23E+01	3.23E+01	4.18E+01	5.50E+02	NC
P382	INORG	Zinc	7440-66-6	D	1	1	2.51E+01	2.51E+01	5.48E+01	2.30E+04	NC
P384/P386	VOC	Acetone	67-64-1	ID	3	1	1.75E-02	1.75E-02		1.60E+03	NC 1.1E-05
P384/P386	VOC	2-Butanone	78-93-3	ID	3	1	2.63E-03	2.63E-03		7.30E+03	NC 3.6E-07
P384/P386	VOC	Ethyl Benzene	100-41-4	D	3	1	4.38E-04	4.38E-04		1.90E+03	NC 2.3E-07
P384/P386	VOC	Toluene	108-88-3	D	3	1	1.04E-03	1.04E-03		6.60E+02	NC 1.6E-06
P384/P386	SVOC	Acenaphthene	83-32-9		3	1	2.28E-02	2.28E-02		3.70E+03	NC 6.2E-06
P384/P386	SVOC	Anthracene	120-12-7	D	3	2	4.75E-02	8.60E-02		2.20E+04	NC 3.9E-06
P384/P386	SVOC	Benzo(a)anthracene	56-55-3	B2	3	3	3.10E-02	1.80E-01		6.20E+00	C 2.9E-02
P384/P386	SVOC	Benzo(a)pyrene	50-32-8	B2	3	3	1.80E-02	2.50E-01		6.20E-01	C 4.0E-01

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P384/P386	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	3	4.50E-02	2.40E-01		6.20E+00	C 3.9E-02
P384/P386	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.10E-01	1.61E-01		2.30E+03	NC 7.0E-05
P384/P386	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	8.90E-02	9.90E-02		6.20E+01	C 1.6E-03
P384/P386	SVOC	Biphenyl	92-52-4	D	3	1	1.98E-02	1.98E-02		3.00E+03	NC 6.6E-06
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	5.65E-02	5.65E-02		3.50E+02	C 1.6E-04
P384/P386	SVOC	Carbazole	86-74-8	B2	3	1	2.45E-02	2.45E-02		2.40E+02	C 1.0E-04
P384/P386	SVOC	Chrysene	218-01-9	B2	3	3	2.10E-02	2.75E-01		6.20E+02	C 4.4E-04
P384/P386	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	1	2.90E-02	2.90E-02		6.20E-01	C 4.7E-02
P384/P386	SVOC	Dibenzofuran	132-64-9	D	3	1	2.23E-02	2.23E-02		2.90E+02	NC 7.7E-05
P384/P386	SVOC	Fluoranthene	206-44-0	D	3	3	3.90E-02	4.00E-01		2.30E+03	NC 1.7E-04
P384/P386	SVOC	Fluorene	86-73-7	D	3	1	3.09E-02	3.09E-02		2.70E+03	NC 1.1E-05
P384/P386	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	9.50E-02	9.90E-02		6.20E+00	C 1.6E-02
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	3	1	2.98E-02	2.98E-02		5.60E+01	NC 5.3E-04
P384/P386	SVOC	Methylphenol (total)	1319-77-3		3	1	2.50E-02	2.50E-02		3.10E+02	NC 8.1E-05
P384/P386	SVOC	Naphthalene	91-20-3	C	3	1	4.88E-02	4.88E-02		5.60E+01	NC 8.7E-04
P384/P386	SVOC	Phenanthrene	85-01-8	D	3	2	2.03E-01	3.60E-01		2.30E+03	NC 1.6E-04
P384/P386	SVOC	Pyrene	129-00-0	D	3	3	3.70E-02	3.40E-01		2.30E+03	NC 1.5E-04
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	28	24	9.41E-02	3.23E+01		2.00E+00	C 1.6E+01
P384/P386	INORG	Aluminum	7429-90-5	D	3	3	3.28E+03	1.98E+04	1.48E+04	7.60E+04	NC 6.6E-02
P384/P386	INORG	Antimony	7440-36-0		3	2	2.90E-01	2.95E-01	4.40E-01	3.10E+01	NC
P384/P386	INORG	Arsenic	7440-38-2	A	3	3	2.30E+00	1.64E+01	1.13E+01	3.90E+00	C 1.3E+00
P384/P386	INORG	Barium	7440-39-3	D	3	3	4.22E+01	1.20E+02	8.38E+01	5.40E+03	NC 6.7E-03
P384/P386	INORG	Beryllium	7440-41-7	B1	3	1	4.50E-01	4.50E-01	5.70E-01	1.50E+02	NC
P384/P386	INORG	Cadmium	7440-43-9	B1	3	2	5.80E-01	1.14E+00	5.52E-01	3.70E+01	NC 1.6E-02
P384/P386	INORG	Chromium (total)	7440-47-3		3	3	7.10E+00	3.63E+01	2.82E+01	2.20E+02	NC 3.7E-02
P384/P386	INORG	Cobalt	7440-48-4	B1	3	3	3.10E+00	8.90E+00	1.00E+01	1.40E+03	NC
P384/P386	INORG	Copper	7440-50-8	D	3	3	1.79E+01	1.34E+02	1.89E+01	3.10E+03	NC 3.7E-02
P384/P386	INORG	Iron	7439-89-6	D	3	3	6.42E+03	3.39E+04	2.44E+04	2.30E+04	NC 4.1E-01
P384/P386	INORG	Lead	7439-92-1	B2	3	3	1.99E+01	7.22E+01	2.00E+01	4.00E+02	NC 1.3E-01
P384/P386	INORG	Manganese	7439-96-5	D	3	3	1.46E+02	4.51E+02	6.76E+02	1.80E+03	NC
P384/P386	INORG	Mercury	7439-97-6	D	3	3	1.20E-02	1.45E-01	7.05E-02	3.67E+00	NC 2.0E-02
P384/P386	INORG	Nickel	7440-02-0	A	3	3	8.50E+00	2.40E+01	1.83E+01	1.60E+03	NC 3.6E-03
P384/P386	INORG	Selenium	7782-49-2	D	3	1	9.30E-01	9.30E-01	3.96E-01	3.90E+02	NC 1.4E-03
P384/P386	INORG	Thallium	7440-28-0		3	1	8.80E-01	8.80E-01	8.40E-01	5.20E+00	NC 7.6E-03
P384/P386	INORG	Vanadium	7440-62-2		3	3	8.80E+00	5.18E+01	4.18E+01	5.50E+02	NC 1.8E-02
P384/P386	INORG	Zinc	7440-66-6	D	3	3	4.77E+01	3.83E+02	5.48E+01	2.30E+04	NC 1.4E-02
P385	VOC	Acetone	67-64-1	ID	1	1	1.46E-02	1.46E-02		1.60E+03	NC 9.1E-06
P385	VOC	Methyl Acetate	79-20-9		1	1	3.88E-03	3.88E-03		2.20E+04	NC 1.8E-07

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P385	SVOC	Benzaldehyde	100-52-7		1	1	2.50E-02	2.50E-02		6.10E+03 NC	4.1E-06
P385	SVOC	Benzo(a)anthracene	56-55-3	B2	1	1	1.90E-02	1.90E-02		6.20E+00 C	3.1E-03
P385	SVOC	Benzo(a)pyrene	50-32-8	B2	1	1	4.05E-02	4.05E-02		6.20E-01 C	6.5E-02
P385	SVOC	Benzo(b)fluoranthene	205-99-2	B2	1	1	6.95E-02	6.95E-02		6.20E+00 C	1.1E-02
P385	SVOC	Benzo(g,h,i)perylene	191-24-2	D	1	1	2.26E-02	2.26E-02		2.30E+03 NC	9.8E-06
P385	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	7.30E-02	7.30E-02		3.50E+02 C	2.1E-04
P385	SVOC	Chrysene	218-01-9	B2	1	1	4.25E-02	4.25E-02		6.20E+02 C	6.9E-05
P385	SVOC	Fluoranthene	206-44-0	D	1	1	5.60E-02	5.60E-02		2.30E+03 NC	2.4E-05
P385	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1	1	1.81E-02	1.81E-02		6.20E+00 C	2.9E-03
P385	SVOC	Phenanthrene	85-01-8	D	1	1	3.75E-02	3.75E-02		2.30E+03 NC	1.6E-05
P385	SVOC	Pyrene	129-00-0	D	1	1	4.85E-02	4.85E-02		2.30E+03 NC	2.1E-05
P385	P/PCB	PCBs (total)	1336-36-3	B2	8	6	2.57E-02	2.72E-01		2.00E+00 C	1.4E-01
P385	INORG	Aluminum	7429-90-5	D	1	1	1.41E+04	1.41E+04	1.48E+04	7.60E+04 NC	
P385	INORG	Arsenic	7440-38-2	A	1	1	7.80E+00	7.80E+00	1.13E+01	3.90E+00 C	
P385	INORG	Barium	7440-39-3	D	1	1	6.94E+01	6.94E+01	8.38E+01	5.40E+03 NC	
P385	INORG	Cadmium	7440-43-9	B1	1	1	5.03E-02	5.03E-02	5.52E-01	3.70E+01 NC	
P385	INORG	Chromium (total)	7440-47-3		1	1	1.53E+01	1.53E+01	2.82E+01	2.20E+02 NC	
P385	INORG	Cobalt	7440-48-4	B1	1	1	1.27E+01	1.27E+01	1.00E+01	1.40E+03 NC	1.9E-03
P385	INORG	Copper	7440-50-8	D	1	1	3.69E+01	3.69E+01	1.89E+01	3.10E+03 NC	5.8E-03
P385	INORG	Iron	7439-89-6	D	1	1	1.70E+04	1.70E+04	2.44E+04	2.30E+04 NC	
P385	INORG	Lead	7439-92-1	B2	1	1	3.82E+01	3.82E+01	2.00E+01	4.00E+02 NC	4.5E-02
P385	INORG	Manganese	7439-96-5	D	1	1	5.77E+02	5.77E+02	6.76E+02	1.80E+03 NC	
P385	INORG	Mercury	7439-97-6	D	1	1	4.40E-02	4.40E-02	7.05E-02	3.67E+00 NC	
P385	INORG	Nickel	7440-02-0	A	1	1	1.68E+01	1.68E+01	1.83E+01	1.60E+03 NC	
P385	INORG	Selenium	7782-49-2	D	1	1	4.40E-01	4.40E-01	3.96E-01	3.90E+02 NC	1.1E-04
P385	INORG	Vanadium	7440-62-2		1	1	2.75E+01	2.75E+01	4.18E+01	5.50E+02 NC	
P385	INORG	Zinc	7440-66-6	D	1	1	5.78E+01	5.78E+01	5.48E+01	2.30E+04 NC	1.3E-04
P389	P/PCB	PCBs (total)	1336-36-3	B2	12	8	7.19E-02	2.03E+00		2.00E+00 C	1.0E+00
P393	P/PCB	PCBs (total)	1336-36-3	B2	18	12	7.19E-02	5.27E+00		2.00E+00 C	2.6E+00
P396	P/PCB	PCBs (total)	1336-36-3	B2	6	1	5.99E+00	5.99E+00		2.00E+00 C	3.0E+00
P398	VOC	Acetone	67-64-1	ID	16	4	6.33E-03	3.20E-02		1.60E+03 NC	2.0E-05
P398	VOC	Benzene	71-43-2	A	16	2	9.50E-04	5.40E-03		6.00E+00 C	9.0E-04
P398	VOC	2-Butanone	78-93-3	ID	16	7	1.05E-03	3.60E-03		7.30E+03 NC	4.9E-07
P398	VOC	Carbon Disulfide	75-15-0		16	1	1.60E-03	1.60E-03		3.60E+02 NC	4.4E-06
P398	VOC	Cyclohexane	110-82-7	ID	16	1	2.40E-03	2.40E-03		9.50E+03 NC	2.5E-07
P398	VOC	Ethyl Benzene	100-41-4	D	16	2	2.83E-04	2.00E-03		1.90E+03 NC	1.1E-06
P398	VOC	2-Hexanone	591-78-6		16	1	4.50E-03	4.50E-03			
P398	VOC	Toluene	108-88-3	D	16	6	6.30E-04	7.90E-03		6.60E+02 NC	1.2E-05

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P398	VOC	Xylenes (total)	1330-20-7	ID	16	1	1.20E-03	1.20E-03		2.80E+02 NC	4.3E-06
P398	SVOC	Acenaphthene	83-32-9		16	5	1.90E-02	1.10E-01		3.70E+03 NC	3.0E-05
P398	SVOC	Acenaphthylene	208-96-8	D	16	2	2.60E-02	8.70E-01		2.30E+03 NC	3.8E-04
P398	SVOC	Anthracene	120-12-7	D	16	10	1.32E-02	8.80E-01		2.20E+04 NC	4.0E-05
P398	SVOC	Benzo(a)anthracene	56-55-3	B2	16	15	3.20E-02	2.60E+00		6.20E+00 C	4.2E-01
P398	SVOC	Benzo(a)pyrene	50-32-8	B2	16	15	3.60E-02	2.70E+00		6.20E-01 C	4.4E+00
P398	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	15	4.90E-02	4.75E+00		6.20E+00 C	7.7E-01
P398	SVOC	Benzo(g,h,i)perylene	191-24-2	D	16	16	1.57E-02	2.30E+00		2.30E+03 NC	1.0E-03
P398	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	15	1.80E-02	1.90E+00		6.20E+01 C	3.1E-02
P398	SVOC	Biphenyl	92-52-4	D	16	1	9.95E-03	9.95E-03		3.00E+03 NC	3.3E-06
P398	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	2	3.98E-02	8.90E-02		3.50E+02 C	2.5E-04
P398	SVOC	Carbazole	86-74-8	B2	16	2	1.70E-02	3.00E-02		2.40E+02 C	1.3E-04
P398	SVOC	Chrysene	218-01-9	B2	16	15	3.30E-02	2.50E+00		6.20E+02 C	4.0E-03
P398	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	16	12	2.40E-02	7.10E-01		6.20E-01 C	1.1E+00
P398	SVOC	Dibenzofuran	132-64-9	D	16	2	1.90E-02	9.40E-02		2.90E+02 NC	3.2E-04
P398	SVOC	Di-n-butylphthalate	84-74-2	D	16	2	1.80E-02	3.50E-02		6.10E+03 NC	5.7E-06
P398	SVOC	Fluoranthene	206-44-0	D	16	15	3.60E-02	5.10E+00		2.30E+03 NC	2.2E-03
P398	SVOC	Fluorene	86-73-7	D	16	2	2.00E-02	3.10E-01		2.70E+03 NC	1.1E-04
P398	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	16	15	2.20E-02	2.05E+00		6.20E+00 C	3.3E-01
P398	SVOC	2-Methylnaphthalene	91-57-6	ID	16	7	1.50E-02	5.00E-02		5.60E+01 NC	8.9E-04
P398	SVOC	Naphthalene	91-20-3	C	16	7	1.13E-02	7.30E-02		5.60E+01 NC	1.3E-03
P398	SVOC	Phenanthrene	85-01-8	D	16	14	3.10E-02	2.00E+00		2.30E+03 NC	8.7E-04
P398	SVOC	Pyrene	129-00-0	D	16	15	4.70E-02	4.10E+00		2.30E+03 NC	1.8E-03
P398	P/PCB	PCBs (total)	1336-36-3	B2	16	9	6.80E-03	9.73E-02		2.00E+00 C	4.9E-02
P398	INORG	Aluminum	7429-90-5	D	16	16	1.40E+03	1.43E+04	1.48E+04	7.60E+04 NC	
P398	INORG	Antimony	7440-36-0		16	15	4.10E-01	3.75E+00	4.40E-01	3.10E+01 NC	1.1E-01
P398	INORG	Arsenic	7440-38-2	A	16	16	2.00E+00	9.60E+00	1.13E+01	3.90E+00 C	
P398	INORG	Barium	7440-39-3	D	16	16	1.61E+01	8.12E+01	8.38E+01	5.40E+03 NC	
P398	INORG	Beryllium	7440-41-7	B1	16	16	7.10E-02	1.00E+00	5.70E-01	1.50E+02 NC	2.9E-03
P398	INORG	Cadmium	7440-43-9	B1	16	16	9.60E-02	8.30E-01	5.52E-01	3.70E+01 NC	7.5E-03
P398	INORG	Chromium (total)	7440-47-3		16	16	7.40E+00	3.89E+01	2.82E+01	2.20E+02 NC	4.9E-02
P398	INORG	Cobalt	7440-48-4	B1	16	16	1.70E+00	1.29E+01	1.00E+01	1.40E+03 NC	2.0E-03
P398	INORG	Copper	7440-50-8	D	16	16	1.89E+01	2.15E+02	1.89E+01	3.10E+03 NC	6.3E-02
P398	INORG	Cyanide (total)	57-12-5	D	16	1	1.90E-01	1.90E-01		1.20E+03 NC	1.6E-04
P398	INORG	Iron	7439-89-6	D	16	16	1.15E+04	5.10E+04	2.44E+04	2.30E+04 NC	1.2E+00
P398	INORG	Lead	7439-92-1	B2	16	16	1.85E+01	9.46E+02	2.00E+01	4.00E+02 NC	2.3E+00
P398	INORG	Manganese	7439-96-5	D	16	16	1.49E+02	6.74E+02	6.76E+02	1.80E+03 NC	
P398	INORG	Mercury	7439-97-6	D	16	9	2.70E-02	8.51E-01	7.05E-02	3.67E+00 NC	2.1E-01

**Table 2-1c: Off-Site Surface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria		
P398	INORG	Nickel	7440-02-0	A	16	16	8.30E+00	4.33E+01	1.83E+01	1.60E+03	NC	1.6E-02	
P398	INORG	Selenium	7782-49-2	D	16	7	2.58E-01	1.20E+00	3.96E-01	3.90E+02	NC	2.1E-03	
P398	INORG	Silver	7440-22-4	D	16	2	1.75E-01	1.90E-01		3.90E+02	NC	4.9E-04	
P398	INORG	Thallium	7440-28-0		16	2	4.90E-01	4.90E-01	8.40E-01	5.20E+00	NC		
P398	INORG	Vanadium	7440-62-2		16	16	3.20E+00	3.48E+01	4.18E+01	5.50E+02	NC		
P398	INORG	Zinc	7440-66-6	D	16	16	2.97E+01	2.47E+02	5.48E+01	2.30E+04	NC	8.4E-03	
P400	P/PCB	PCBs (total)	1336-36-3	B2	15	15	4.57E-02	3.32E+00		2.00E+00	C	1.7E+00	
P403	P/PCB	PCBs (total)	1336-36-3	B2	3	1	1.05E-01	1.05E-01		2.00E+00	C	5.3E-02	
P405	P/PCB	PCBs (total)	1336-36-3	B2	5	3	5.12E-02	5.65E-02		2.00E+00	C	2.8E-02	
P413	P/PCB	PCBs (total)	1336-36-3	B2	7	5	6.28E-02	3.85E-01		2.00E+00	C	1.9E-01	
P415	P/PCB	PCBs (total)	1336-36-3	B2	13	2	7.57E-02	1.23E-01		2.00E+00	C	6.1E-02	
P419	P/PCB	PCBs (total)	1336-36-3	B2	6	4	1.39E-01	1.91E-01		2.00E+00	C	9.6E-02	
P420	P/PCB	PCBs (total)	1336-36-3	B2	5	3	9.62E-02	7.90E-01		2.00E+00	C	3.9E-01	
	Notes:												
	Only constituents detected at each area are shown.												
	Shaded cells represent ratios of conc to the screening criteria greater than 1.												
	Ratios are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
	The Screening Criteria for residential and industrial soil is the lower of the integrated Screening Criteria at:												
		target cancer risk =	1E-05										
		target hazard quotient =	1										
	The Screening Criteria for Pyrene were used as surrogates for Phenanthrene and Benzo(g,h,i)perylene.												
	The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.												
	The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).												
	The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Criteria for 4-Methylphenol.												
	The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs) for cancer effects												
	and Aroclor 1254 for noncancer effects.												
	The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.												
	The Screening Criteria for Mercury was calculated by ENVIRON to account for the vapor inhalation pathway using:												
	EPA Region 9 equations, RfC from IRIS, and chemical properties from EPA's Soil Screening Guidance.												
	C - The Screening Criterion is based on cancer risk.												
	NC - The Screening Criterion is based on noncancer effects.												
	Chem Group - Chemical Group												
	Carc Class - EPA Weight-of-Evidence Cancer Classification												

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A025	VOC	Acetone	67-64-1	ID	30	6	5.00E-03	1.20E-02		1.60E+03 NC	7.5E-06
A025	VOC	Benzene	71-43-2	A	30	2	4.00E-04	4.70E-04		6.00E+00 C	7.8E-05
A025	VOC	2-Butanone	78-93-3	ID	30	1	2.60E-03	2.60E-03		7.30E+03 NC	3.6E-07
A025	VOC	Cyclohexane	110-82-7	ID	30	1	5.60E-04	5.60E-04		9.50E+03 NC	5.9E-08
A025	VOC	1,1-Dichloroethene	75-35-4	C	30	1	3.90E-03	3.90E-03		1.20E+02 NC	3.3E-05
A025	VOC	Ethyl Benzene	100-41-4	D	30	1	4.50E-04	4.50E-04		1.90E+03 NC	2.4E-07
A025	VOC	Toluene	108-88-3	D	30	7	4.80E-04	1.30E-03		6.60E+02 NC	2.0E-06
A025	VOC	Trichlorofluoromethane	75-69-4		30	2	3.60E-03	6.50E-03		3.90E+02 NC	1.7E-05
A025	SVOC	Acenaphthene	83-32-9		30	1	2.80E-02	2.80E-02		3.70E+03 NC	7.6E-06
A025	SVOC	Anthracene	120-12-7	D	30	1	5.10E-02	5.10E-02		2.20E+04 NC	2.3E-06
A025	SVOC	Benzo(a)anthracene	56-55-3	B2	30	6	2.10E-02	1.70E-01		6.20E+00 C	2.7E-02
A025	SVOC	Benzo(a)pyrene	50-32-8	B2	30	6	2.30E-02	3.10E-01		6.20E-01 C	5.0E-01
A025	SVOC	Benzo(b)fluoranthene	205-99-2	B2	30	6	2.90E-02	4.00E-01		6.20E+00 C	6.5E-02
A025	SVOC	Benzo(g,h,i)perylene	191-24-2	D	30	6	2.00E-02	4.80E-01		2.30E+03 NC	2.1E-04
A025	SVOC	Benzo(k)fluoranthene	207-08-9	B2	30	5	3.70E-02	1.90E-01		6.20E+01 C	3.1E-03
A025	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	30	2	4.70E-02	6.30E-02		3.50E+02 C	1.8E-04
A025	SVOC	Chrysene	218-01-9	B2	30	6	1.80E-02	1.60E-01		6.20E+02 C	2.6E-04
A025	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	30	3	1.70E-02	8.70E-02		6.20E-01 C	1.4E-01
A025	SVOC	Di-n-butylphthalate	84-74-2	D	30	3	1.90E-02	3.70E-02		6.10E+03 NC	6.1E-06
A025	SVOC	Fluoranthene	206-44-0	D	30	6	3.50E-02	3.10E-01		2.30E+03 NC	1.3E-04
A025	SVOC	Fluorene	86-73-7	D	30	1	1.70E-02	1.70E-02		2.70E+03 NC	6.3E-06
A025	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	30	6	1.60E-02	3.60E-01		6.20E+00 C	5.8E-02
A025	SVOC	Phenanthrene	85-01-8	D	30	5	2.20E-02	2.10E-01		2.30E+03 NC	9.1E-05
A025	SVOC	Pyrene	129-00-0	D	30	6	3.20E-02	2.60E-01		2.30E+03 NC	1.1E-04
A025	P/PCB	PCBs (total)	1336-36-3	B2	28	1	3.35E-02	3.35E-02		2.00E+00 C	1.7E-02
A025	INORG	Aluminum	7429-90-5	D	30	30	3.33E+03	2.24E+04	1.48E+04	7.60E+04 NC	1.0E-01
A025	INORG	Antimony	7440-36-0		30	20	2.90E-01	1.10E+00	4.40E-01	3.10E+01 NC	2.1E-02
A025	INORG	Arsenic	7440-38-2	A	30	30	3.40E+00	1.80E+01	1.13E+01	3.90E+00 C	1.7E+00
A025	INORG	Barium	7440-39-3	D	30	30	3.43E+01	1.73E+02	8.38E+01	5.40E+03 NC	1.7E-02
A025	INORG	Beryllium	7440-41-7	B1	30	30	2.10E-01	3.40E+00	5.70E-01	1.50E+02 NC	1.9E-02
A025	INORG	Cadmium	7440-43-9	B1	30	21	4.70E-02	4.10E-01	5.52E-01	3.70E+01 NC	
A025	INORG	Chromium (total)	7440-47-3		30	30	9.30E+00	7.88E+01	2.82E+01	2.20E+02 NC	2.3E-01
A025	INORG	Cobalt	7440-48-4	B1	30	30	2.90E+00	4.03E+01	1.00E+01	1.40E+03 NC	2.2E-02
A025	INORG	Copper	7440-50-8	D	30	30	7.50E+00	6.28E+01	1.89E+01	3.10E+03 NC	1.4E-02
A025	INORG	Iron	7439-89-6	D	30	30	7.83E+03	5.31E+04	2.44E+04	2.30E+04 NC	1.2E+00
A025	INORG	Lead	7439-92-1	B2	30	30	6.00E+00	7.29E+02	2.00E+01	4.00E+02 NC	1.8E+00
A025	INORG	Manganese	7439-96-5	D	30	30	2.70E+01	1.51E+03	6.76E+02	1.80E+03 NC	4.6E-01
A025	INORG	Mercury	7439-97-6	D	30	17	1.80E-02	2.10E-01	7.05E-02	3.67E+00 NC	3.8E-02

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A025	INORG	Nickel	7440-02-0	A	30	30	6.00E+00	9.87E+01	1.83E+01	1.60E+03 NC	5.0E-02
A025	INORG	Selenium	7782-49-2	D	30	13	4.60E-01	1.10E+00	3.96E-01	3.90E+02 NC	1.8E-03
A025	INORG	Thallium	7440-28-0		30	10	4.50E-01	1.10E+00	8.40E-01	5.20E+00 NC	5.0E-02
A025	INORG	Vanadium	7440-62-2		30	30	9.00E+00	6.94E+01	4.18E+01	5.50E+02 NC	5.0E-02
A025	INORG	Zinc	7440-66-6	D	30	30	1.85E+01	9.33E+01	5.48E+01	2.30E+04 NC	1.7E-03
A026	VOC	Acetone	67-64-1	ID	20	13	6.50E-03	4.30E-02		1.60E+03 NC	2.7E-05
A026	VOC	Benzene	71-43-2	A	20	2	4.20E-04	7.90E-04		6.00E+00 C	1.3E-04
A026	VOC	2-Butanone	78-93-3	ID	20	3	2.35E-03	7.20E-03		7.30E+03 NC	9.9E-07
A026	VOC	Cumene	98-82-8	D	20	2	6.70E-04	2.80E-03		5.70E+02 NC	4.9E-06
A026	VOC	Cyclohexane	110-82-7	ID	20	1	6.50E-04	6.50E-04		9.50E+03 NC	6.8E-08
A026	VOC	1,2-Dichlorobenzene	95-50-1	D	20	2	7.30E-04	1.10E-03		1.10E+03 NC	1.0E-06
A026	VOC	1,3-Dichlorobenzene	541-73-1	D	20	2	4.10E-04	8.30E-03		1.60E+01 NC	5.2E-04
A026	VOC	1,4-Dichlorobenzene	106-46-7	C	20	5	4.10E-04	2.40E-02		3.50E+01 C	6.9E-04
A026	VOC	Ethyl Benzene	100-41-4	D	20	4	4.30E-04	2.80E-03		1.90E+03 NC	1.5E-06
A026	VOC	4-Methyl-2-pentanone	108-10-1	ID	20	2	2.30E-03	2.50E-03		7.90E+02 NC	3.2E-06
A026	VOC	Methylcyclohexane	108-87-2		20	4	4.50E-04	9.50E-03		2.60E+03 NC	3.7E-06
A026	VOC	Tetrachloroethene	127-18-4	C-B2	20	1	8.00E-04	8.00E-04		1.50E+01 C	5.3E-05
A026	VOC	Toluene	108-88-3	D	20	5	5.00E-04	6.20E-03		6.60E+02 NC	9.4E-06
A026	VOC	1,2,4-Trichlorobenzene	120-82-1	D	20	2	8.50E-04	2.20E-02		6.50E+02 NC	3.4E-05
A026	VOC	Xylenes (total)	1330-20-7	ID	20	3	4.60E-03	1.30E-02		2.80E+02 NC	4.6E-05
A026	SVOC	Acenaphthene	83-32-9		20	5	1.80E-02	7.55E-02		3.70E+03 NC	2.0E-05
A026	SVOC	Acenaphthylene	208-96-8	D	20	3	1.05E-02	4.20E-02		2.30E+03 NC	1.8E-05
A026	SVOC	Anthracene	120-12-7	D	20	10	9.20E-03	1.47E-01		2.20E+04 NC	6.7E-06
A026	SVOC	Benzo(a)anthracene	56-55-3	B2	20	16	1.90E-02	5.70E-01		6.20E+00 C	9.2E-02
A026	SVOC	Benzo(a)pyrene	50-32-8	B2	20	17	1.90E-02	5.30E-01		6.20E-01 C	8.5E-01
A026	SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	17	2.10E-02	5.80E-01		6.20E+00 C	9.4E-02
A026	SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	14	2.30E-02	3.10E-01		2.30E+03 NC	1.3E-04
A026	SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	10	1.12E-02	3.20E-01		6.20E+01 C	5.2E-03
A026	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	8	2.40E-02	3.50E-01		3.50E+02 C	1.0E-03
A026	SVOC	Butylbenzylphthalate	85-68-7	C	20	1	4.70E-01	4.70E-01		1.20E+04 NC	3.9E-05
A026	SVOC	Caprolactam	105-60-2		20	2	1.08E-02	2.00E-02		3.10E+04 NC	6.5E-07
A026	SVOC	Carbazole	86-74-8	B2	20	4	3.60E-02	8.05E-02		2.40E+02 C	3.4E-04
A026	SVOC	Chrysene	218-01-9	B2	20	17	2.10E-02	6.30E-01		6.20E+02 C	1.0E-03
A026	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	6	1.80E-02	8.80E-02		6.20E-01 C	1.4E-01
A026	SVOC	Dibenzofuran	132-64-9	D	20	4	2.00E-02	2.47E-02		2.90E+02 NC	8.5E-05
A026	SVOC	2,4-Dimethylphenol	105-67-9		20	5	1.85E-02	4.40E-01		1.20E+03 NC	3.7E-04
A026	SVOC	Di-n-butylphthalate	84-74-2	D	20	2	3.71E-02	9.80E-02		6.10E+03 NC	1.6E-05
A026	SVOC	Di-n-octylphthalate	117-84-0		20	3	4.90E-02	4.30E-01		2.40E+03 NC	1.8E-04

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A026	SVOC	Fluoranthene	206-44-0	D	20	18	3.20E-02	1.30E+00		2.30E+03 NC	5.7E-04
A026	SVOC	Fluorene	86-73-7	D	20	5	2.40E-02	6.55E-02		2.70E+03 NC	2.4E-05
A026	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	13	1.26E-02	2.90E-01		6.20E+00 C	4.7E-02
A026	SVOC	2-Methylnaphthalene	91-57-6	ID	20	3	1.60E-02	3.80E-02		5.60E+01 NC	6.8E-04
A026	SVOC	Methylphenol (total)	1319-77-3		20	4	1.26E-02	1.74E-01		3.10E+02 NC	5.6E-04
A026	SVOC	Naphthalene	91-20-3	C	20	4	2.30E-02	3.70E-02		5.60E+01 NC	6.6E-04
A026	SVOC	Phenanthrene	85-01-8	D	20	17	2.20E-02	6.30E-01		2.30E+03 NC	2.7E-04
A026	SVOC	Phenol	108-95-2	ID	20	4	7.60E-02	1.10E+00		3.70E+04 NC	3.0E-05
A026	SVOC	Pyrene	129-00-0	D	20	17	2.90E-02	1.10E+00		2.30E+03 NC	4.8E-04
A026	P/PCB	PCBs (total)	1336-36-3	B2	20	20	5.44E-02	3.17E+02		2.00E+00 C	1.6E+02
A026	INORG	Aluminum	7429-90-5	D	20	20	5.79E+03	2.10E+04	1.48E+04	7.60E+04 NC	8.2E-02
A026	INORG	Antimony	7440-36-0		20	12	3.80E-01	2.70E+00	4.40E-01	3.10E+01 NC	7.3E-02
A026	INORG	Arsenic	7440-38-2	A	20	20	3.00E+00	9.80E+00	1.13E+01	3.90E+00 C	
A026	INORG	Barium	7440-39-3	D	20	20	4.95E+01	1.19E+02	8.38E+01	5.40E+03 NC	6.5E-03
A026	INORG	Beryllium	7440-41-7	B1	20	6	6.00E-01	1.80E+00	5.70E-01	1.50E+02 NC	8.2E-03
A026	INORG	Cadmium	7440-43-9	B1	20	18	1.67E-01	8.00E-01	5.52E-01	3.70E+01 NC	6.7E-03
A026	INORG	Chromium (total)	7440-47-3		20	20	1.20E+01	4.78E+01	2.82E+01	2.20E+02 NC	8.9E-02
A026	INORG	Cobalt	7440-48-4	B1	20	20	3.40E+00	1.83E+01	1.00E+01	1.40E+03 NC	5.9E-03
A026	INORG	Copper	7440-50-8	D	20	20	1.47E+01	5.89E+02	1.89E+01	3.10E+03 NC	1.8E-01
A026	INORG	Iron	7439-89-6	D	20	20	1.03E+04	4.12E+04	2.44E+04	2.30E+04 NC	7.3E-01
A026	INORG	Lead	7439-92-1	B2	20	20	1.68E+01	1.67E+02	2.00E+01	4.00E+02 NC	3.7E-01
A026	INORG	Manganese	7439-96-5	D	20	20	6.47E+01	8.65E+02	6.76E+02	1.80E+03 NC	1.0E-01
A026	INORG	Mercury	7439-97-6	D	20	20	1.80E-02	2.60E+00	7.05E-02	3.67E+00 NC	6.9E-01
A026	INORG	Nickel	7440-02-0	A	20	20	8.90E+00	5.51E+01	1.83E+01	1.60E+03 NC	2.3E-02
A026	INORG	Selenium	7782-49-2	D	20	2	3.50E-01	3.70E-01	3.96E-01	3.90E+02 NC	
A026	INORG	Silver	7440-22-4	D	20	2	1.30E-01	1.33E-01		3.90E+02 NC	3.4E-04
A026	INORG	Thallium	7440-28-0		20	10	4.70E-01	1.20E+00	8.40E-01	5.20E+00 NC	6.9E-02
A026	INORG	Vanadium	7440-62-2		20	20	9.30E+00	7.92E+01	4.18E+01	5.50E+02 NC	6.8E-02
A026	INORG	Zinc	7440-66-6	D	20	20	4.45E+01	1.76E+02	5.48E+01	2.30E+04 NC	5.3E-03
A027	VOC	Acetone	67-64-1	ID	12	2	1.20E-02	1.70E-02		1.60E+03 NC	1.1E-05
A027	VOC	2-Butanone	78-93-3	ID	12	3	3.50E-03	7.00E-03		7.30E+03 NC	9.6E-07
A027	VOC	Carbon Disulfide	75-15-0		12	1	2.10E-03	2.10E-03		3.60E+02 NC	5.8E-06
A027	VOC	Toluene	108-88-3	D	12	1	7.40E-04	7.40E-04		6.60E+02 NC	1.1E-06
A027	SVOC	Acenaphthene	83-32-9		12	2	9.50E-02	2.10E-01		3.70E+03 NC	5.7E-05
A027	SVOC	Anthracene	120-12-7	D	12	2	1.20E-01	1.40E-01		2.20E+04 NC	6.4E-06
A027	SVOC	Benzaldehyde	100-52-7		11	1	4.20E-02	4.20E-02		6.10E+03 NC	6.9E-06
A027	SVOC	Benzo(a)anthracene	56-55-3	B2	12	5	3.10E-02	3.30E-01		6.20E+00 C	5.3E-02
A027	SVOC	Benzo(a)pyrene	50-32-8	B2	12	5	4.30E-02	3.10E-01		6.20E-01 C	5.0E-01

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A027	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	6	2.20E-02	3.20E-01		6.20E+00 C	5.2E-02
A027	SVOC	Benzo(g,h,i)perylene	191-24-2	D	12	5	3.60E-02	1.70E-01		2.30E+03 NC	7.4E-05
A027	SVOC	Benzo(k)fluoranthene	207-08-9	B2	12	5	2.50E-02	1.70E-01		6.20E+01 C	2.7E-03
A027	SVOC	Biphenyl	92-52-4	D	12	1	4.90E-02	4.90E-02		3.00E+03 NC	1.6E-05
A027	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	12	3	3.50E-02	1.60E-01		3.50E+02 C	4.6E-04
A027	SVOC	Butylbenzylphthalate	85-68-7	C	12	1	9.10E-02	9.10E-02		1.20E+04 NC	7.6E-06
A027	SVOC	Carbazole	86-74-8	B2	12	2	9.10E-02	1.10E-01		2.40E+02 C	4.6E-04
A027	SVOC	Chrysene	218-01-9	B2	12	5	4.40E-02	3.90E-01		6.20E+02 C	6.3E-04
A027	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	12	2	2.00E-02	4.20E-02		6.20E-01 C	6.8E-02
A027	SVOC	Dibenzofuran	132-64-9	D	12	2	3.80E-02	2.00E-01		2.90E+02 NC	6.9E-04
A027	SVOC	Fluoranthene	206-44-0	D	12	8	1.70E-02	1.10E+00		2.30E+03 NC	4.8E-04
A027	SVOC	Fluorene	86-73-7	D	12	2	8.50E-02	2.40E-01		2.70E+03 NC	8.9E-05
A027	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	12	5	2.40E-02	1.60E-01		6.20E+00 C	2.6E-02
A027	SVOC	2-Methylnaphthalene	91-57-6	ID	12	2	1.80E-02	1.90E-01		5.60E+01 NC	3.4E-03
A027	SVOC	Naphthalene	91-20-3	C	12	2	2.70E-02	5.70E-01		5.60E+01 NC	1.0E-02
A027	SVOC	Phenanthrene	85-01-8	D	12	4	5.00E-02	8.40E-01		2.30E+03 NC	3.7E-04
A027	SVOC	Pyrene	129-00-0	D	12	6	1.80E-02	8.30E-01		2.30E+03 NC	3.6E-04
A027	P/PCB	PCBs (total)	1336-36-3	B2	12	10	4.94E-02	2.92E+01		2.00E+00 C	1.5E+01
A027	INORG	Aluminum	7429-90-5	D	12	12	3.64E+03	5.74E+04	1.48E+04	7.60E+04 NC	5.6E-01
A027	INORG	Antimony	7440-36-0		12	6	3.70E-01	1.50E+00	4.40E-01	3.10E+01 NC	3.4E-02
A027	INORG	Arsenic	7440-38-2	A	12	12	5.80E+00	1.97E+01	1.13E+01	3.90E+00 C	2.2E+00
A027	INORG	Barium	7440-39-3	D	12	12	4.23E+01	3.57E+02	8.38E+01	5.40E+03 NC	5.1E-02
A027	INORG	Beryllium	7440-41-7	B1	12	4	1.30E+00	1.60E+00	5.70E-01	1.50E+02 NC	6.9E-03
A027	INORG	Cadmium	7440-43-9	B1	12	11	8.40E-02	5.30E+00	5.52E-01	3.70E+01 NC	1.3E-01
A027	INORG	Chromium (total)	7440-47-3		12	12	1.00E+01	6.57E+01	2.82E+01	2.20E+02 NC	1.7E-01
A027	INORG	Cobalt	7440-48-4	B1	12	12	5.60E+00	1.51E+01	1.00E+01	1.40E+03 NC	3.6E-03
A027	INORG	Copper	7440-50-8	D	12	12	1.36E+01	1.97E+03	1.89E+01	3.10E+03 NC	6.3E-01
A027	INORG	Iron	7439-89-6	D	12	12	1.46E+04	3.68E+04	2.44E+04	2.30E+04 NC	5.4E-01
A027	INORG	Lead	7439-92-1	B2	12	12	1.64E+01	1.83E+02	2.00E+01	4.00E+02 NC	4.1E-01
A027	INORG	Manganese	7439-96-5	D	12	12	1.25E+02	5.89E+02	6.76E+02	1.80E+03 NC	
A027	INORG	Mercury	7439-97-6	D	12	12	4.70E-02	9.90E-01	7.05E-02	3.67E+00 NC	2.5E-01
A027	INORG	Nickel	7440-02-0	A	12	12	1.18E+01	1.23E+02	1.83E+01	1.60E+03 NC	6.5E-02
A027	INORG	Silver	7440-22-4	D	12	2	4.20E-01	9.50E-01		3.90E+02 NC	2.4E-03
A027	INORG	Thallium	7440-28-0		12	1	1.10E+00	1.10E+00	8.40E-01	5.20E+00 NC	5.0E-02
A027	INORG	Vanadium	7440-62-2		12	12	1.27E+01	5.33E+01	4.18E+01	5.50E+02 NC	2.1E-02
A027	INORG	Zinc	7440-66-6	D	12	12	5.14E+01	8.18E+02	5.48E+01	2.30E+04 NC	3.3E-02
A029	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	4	2	3.90E-02	5.70E-02		3.50E+02 C	1.6E-04
A029	SVOC	Di-n-butylphthalate	84-74-2	D	4	1	2.10E-02	2.10E-02		6.10E+03 NC	3.4E-06

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
A029	SVOC	Di-n-octylphthalate	117-84-0		4	1	5.20E-02	5.20E-02		2.40E+03 NC	2.2E-05
A029	P/PCB	PCBs (total)	1336-36-3	B2	4	2	7.68E-02	1.29E-01		2.00E+00 C	6.4E-02
A029	INORG	Aluminum	7429-90-5	D	4	4	4.12E+03	1.21E+04	1.48E+04	7.60E+04 NC	
A029	INORG	Antimony	7440-36-0		4	2	3.40E-01	3.70E-01	4.40E-01	3.10E+01 NC	
A029	INORG	Arsenic	7440-38-2	A	4	4	5.20E+00	1.36E+01	1.13E+01	3.90E+00 C	6.0E-01
A029	INORG	Barium	7440-39-3	D	4	4	1.69E+01	5.77E+01	8.38E+01	5.40E+03 NC	
A029	INORG	Cadmium	7440-43-9	B1	4	1	5.20E-02	5.20E-02	5.52E-01	3.70E+01 NC	
A029	INORG	Chromium (total)	7440-47-3		4	4	1.25E+01	1.99E+01	2.82E+01	2.20E+02 NC	
A029	INORG	Cobalt	7440-48-4	B1	4	4	5.10E+00	2.54E+01	1.00E+01	1.40E+03 NC	1.1E-02
A029	INORG	Copper	7440-50-8	D	4	4	1.38E+01	1.86E+01	1.89E+01	3.10E+03 NC	
A029	INORG	Iron	7439-89-6	D	4	4	1.59E+04	2.08E+04	2.44E+04	2.30E+04 NC	
A029	INORG	Lead	7439-92-1	B2	4	4	5.80E+00	1.39E+01	2.00E+01	4.00E+02 NC	
A029	INORG	Manganese	7439-96-5	D	4	4	2.15E+02	5.71E+02	6.76E+02	1.80E+03 NC	
A029	INORG	Mercury	7439-97-6	D	4	3	1.20E-02	3.70E-02	7.05E-02	3.67E+00 NC	
A029	INORG	Nickel	7440-02-0	A	4	4	1.09E+01	2.88E+01	1.83E+01	1.60E+03 NC	6.6E-03
A029	INORG	Vanadium	7440-62-2		4	4	1.16E+01	2.75E+01	4.18E+01	5.50E+02 NC	
A029	INORG	Zinc	7440-66-6	D	4	4	3.13E+01	5.03E+01	5.48E+01	2.30E+04 NC	
P002	SVOC	Benzo(b)fluoranthene	205-99-2	B2	2	1	8.20E-02	8.20E-02		6.20E+00 C	1.3E-02
P002	SVOC	Chrysene	218-01-9	B2	2	1	6.90E-02	6.90E-02		6.20E+02 C	1.1E-04
P002	SVOC	Fluoranthene	206-44-0	D	2	1	9.70E-02	9.70E-02		2.30E+03 NC	4.2E-05
P002	SVOC	Phenanthrene	85-01-8	D	2	1	1.20E-01	1.20E-01		2.30E+03 NC	5.2E-05
P002	SVOC	Pyrene	129-00-0	D	2	1	8.20E-02	8.20E-02		2.30E+03 NC	3.6E-05
P002	INORG	Aluminum	7429-90-5	D	2	2	8.47E+03	9.41E+03	1.48E+04	7.60E+04 NC	
P002	INORG	Arsenic	7440-38-2	A	2	2	1.03E+01	1.59E+01	1.13E+01	3.90E+00 C	1.2E+00
P002	INORG	Barium	7440-39-3	D	2	2	7.60E+01	1.86E+02	8.38E+01	5.40E+03 NC	1.9E-02
P002	INORG	Beryllium	7440-41-7	B1	2	2	9.70E-01	2.20E+00	5.70E-01	1.50E+02 NC	1.1E-02
P002	INORG	Cadmium	7440-43-9	B1	2	1	3.30E+00	3.30E+00	5.52E-01	3.70E+01 NC	7.4E-02
P002	INORG	Chromium (total)	7440-47-3		2	2	1.86E+01	2.23E+01	2.82E+01	2.20E+02 NC	
P002	INORG	Cobalt	7440-48-4	B1	2	2	1.38E+01	2.68E+01	1.00E+01	1.40E+03 NC	1.2E-02
P002	INORG	Copper	7440-50-8	D	2	2	1.23E+01	1.33E+01	1.89E+01	3.10E+03 NC	
P002	INORG	Iron	7439-89-6	D	2	2	2.24E+04	8.43E+04	2.44E+04	2.30E+04 NC	2.6E+00
P002	INORG	Lead	7439-92-1	B2	2	2	1.42E+01	2.25E+01	2.00E+01	4.00E+02 NC	6.2E-03
P002	INORG	Manganese	7439-96-5	D	2	2	6.32E+02	6.41E+02	6.76E+02	1.80E+03 NC	
P002	INORG	Mercury	7439-97-6	D	2	2	4.60E-02	1.90E-01	7.05E-02	3.67E+00 NC	3.3E-02
P002	INORG	Nickel	7440-02-0	A	2	2	1.53E+01	6.22E+01	1.83E+01	1.60E+03 NC	2.7E-02
P002	INORG	Thallium	7440-28-0		2	2	5.80E-01	2.10E+00	8.40E-01	5.20E+00 NC	2.4E-01
P002	INORG	Vanadium	7440-62-2		2	2	3.50E+01	4.28E+01	4.18E+01	5.50E+02 NC	1.8E-03
P002	INORG	Zinc	7440-66-6	D	2	2	4.53E+01	1.17E+02	5.48E+01	2.30E+04 NC	2.7E-03

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P025	P/PCB	PCBs (total)	1336-36-3	B2	2	2	3.23E+00	8.27E+00		2.00E+00 C	4.1E+00
P028	P/PCB	PCBs (total)	1336-36-3	B2	2	2	1.59E+00	7.33E+00		2.00E+00 C	3.7E+00
P030	P/PCB	PCBs (total)	1336-36-3	B2	30	2	1.00E-01	3.93E-01		2.00E+00 C	2.0E-01
P039	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	4	2	3.90E-02	5.70E-02		3.50E+02 C	1.6E-04
P039	SVOC	Di-n-butylphthalate	84-74-2	D	4	1	2.10E-02	2.10E-02		6.10E+03 NC	3.4E-06
P039	SVOC	Di-n-octylphthalate	117-84-0		4	1	5.20E-02	5.20E-02		2.40E+03 NC	2.2E-05
P039	P/PCB	PCBs (total)	1336-36-3	B2	6	3	5.78E-02	1.29E-01		2.00E+00 C	6.4E-02
P039	INORG	Aluminum	7429-90-5	D	4	4	4.12E+03	1.21E+04	1.48E+04	7.60E+04 NC	
P039	INORG	Antimony	7440-36-0		4	2	3.40E-01	3.70E-01	4.40E-01	3.10E+01 NC	
P039	INORG	Arsenic	7440-38-2	A	4	4	5.20E+00	1.36E+01	1.13E+01	3.90E+00 C	6.0E-01
P039	INORG	Barium	7440-39-3	D	4	4	1.69E+01	5.77E+01	8.38E+01	5.40E+03 NC	
P039	INORG	Cadmium	7440-43-9	B1	4	1	5.20E-02	5.20E-02	5.52E-01	3.70E+01 NC	
P039	INORG	Chromium (total)	7440-47-3		4	4	1.25E+01	1.99E+01	2.82E+01	2.20E+02 NC	
P039	INORG	Cobalt	7440-48-4	B1	4	4	5.10E+00	2.54E+01	1.00E+01	1.40E+03 NC	1.1E-02
P039	INORG	Copper	7440-50-8	D	4	4	1.38E+01	1.86E+01	1.89E+01	3.10E+03 NC	
P039	INORG	Iron	7439-89-6	D	4	4	1.59E+04	2.08E+04	2.44E+04	2.30E+04 NC	
P039	INORG	Lead	7439-92-1	B2	4	4	5.80E+00	1.39E+01	2.00E+01	4.00E+02 NC	
P039	INORG	Manganese	7439-96-5	D	4	4	2.15E+02	5.71E+02	6.76E+02	1.80E+03 NC	
P039	INORG	Mercury	7439-97-6	D	4	3	1.20E-02	3.70E-02	7.05E-02	3.67E+00 NC	
P039	INORG	Nickel	7440-02-0	A	4	4	1.09E+01	2.88E+01	1.83E+01	1.60E+03 NC	6.6E-03
P039	INORG	Vanadium	7440-62-2		4	4	1.16E+01	2.75E+01	4.18E+01	5.50E+02 NC	
P039	INORG	Zinc	7440-66-6	D	4	4	3.13E+01	5.03E+01	5.48E+01	2.30E+04 NC	
P217	VOC	Methyl Acetate	79-20-9		24	1	5.20E-03	5.20E-03		2.20E+04 NC	2.4E-07
P217	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		24	3	2.30E-03	3.80E-03		2.10E+04 NC	1.8E-07
P217	P/PCB	PCBs (total)	1336-36-3	B2	24	3	5.44E-02	6.35E-02		2.00E+00 C	3.2E-02
P217	INORG	Aluminum	7429-90-5	D	24	24	8.61E+03	2.36E+04	1.48E+04	7.60E+04 NC	1.2E-01
P217	INORG	Antimony	7440-36-0		24	7	8.70E-01	1.40E+00	4.40E-01	3.10E+01 NC	3.1E-02
P217	INORG	Arsenic	7440-38-2	A	24	24	6.00E+00	3.66E+01	1.13E+01	3.90E+00 C	6.5E+00
P217	INORG	Barium	7440-39-3	D	24	24	4.20E+01	1.32E+02	8.38E+01	5.40E+03 NC	8.9E-03
P217	INORG	Beryllium	7440-41-7	B1	24	22	2.70E-01	3.90E+00	5.70E-01	1.50E+02 NC	2.2E-02
P217	INORG	Cadmium	7440-43-9	B1	24	10	1.80E-01	9.60E-01	5.52E-01	3.70E+01 NC	1.1E-02
P217	INORG	Chromium (total)	7440-47-3		24	24	1.02E+01	6.40E+01	2.82E+01	2.20E+02 NC	1.6E-01
P217	INORG	Cobalt	7440-48-4	B1	24	24	5.20E+00	2.01E+01	1.00E+01	1.40E+03 NC	7.2E-03
P217	INORG	Copper	7440-50-8	D	24	24	6.70E+00	2.59E+01	1.89E+01	3.10E+03 NC	2.3E-03
P217	INORG	Cyanide (total)	57-12-5	D	24	2	1.30E-01	3.90E-01		1.20E+03 NC	3.3E-04
P217	INORG	Iron	7439-89-6	D	24	24	1.40E+04	4.81E+04	2.44E+04	2.30E+04 NC	1.0E+00
P217	INORG	Lead	7439-92-1	B2	24	24	1.32E+01	2.57E+01	2.00E+01	4.00E+02 NC	1.4E-02
P217	INORG	Manganese	7439-96-5	D	24	24	1.27E+02	1.54E+03	6.76E+02	1.80E+03 NC	4.8E-01

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P217	INORG	Mercury	7439-97-6	D	24	23	2.20E-02	2.00E-01	7.05E-02	3.67E+00 NC	3.5E-02
P217	INORG	Nickel	7440-02-0	A	24	24	8.90E+00	5.23E+01	1.83E+01	1.60E+03 NC	2.1E-02
P217	INORG	Selenium	7782-49-2	D	24	3	4.90E-01	7.00E-01	3.96E-01	3.90E+02 NC	7.8E-04
P217	INORG	Thallium	7440-28-0		24	9	6.13E-01	1.10E+00	8.40E-01	5.20E+00 NC	5.0E-02
P217	INORG	Vanadium	7440-62-2		24	24	2.20E+01	1.05E+02	4.18E+01	5.50E+02 NC	1.1E-01
P217	INORG	Zinc	7440-66-6	D	24	24	3.74E+01	1.59E+02	5.48E+01	2.30E+04 NC	4.5E-03
P382	INORG	Aluminum	7429-90-5	D	1	1	3.64E+03	3.64E+03	1.48E+04	7.60E+04 NC	
P382	INORG	Arsenic	7440-38-2	A	1	1	1.28E+01	1.28E+01	1.13E+01	3.90E+00 C	4.0E-01
P382	INORG	Barium	7440-39-3	D	1	1	4.23E+01	4.23E+01	8.38E+01	5.40E+03 NC	
P382	INORG	Cadmium	7440-43-9	B1	1	1	6.00E-01	6.00E-01	5.52E-01	3.70E+01 NC	1.3E-03
P382	INORG	Chromium (total)	7440-47-3		1	1	1.00E+01	1.00E+01	2.82E+01	2.20E+02 NC	
P382	INORG	Cobalt	7440-48-4	B1	1	1	5.60E+00	5.60E+00	1.00E+01	1.40E+03 NC	
P382	INORG	Copper	7440-50-8	D	1	1	1.36E+01	1.36E+01	1.89E+01	3.10E+03 NC	
P382	INORG	Iron	7439-89-6	D	1	1	1.79E+04	1.79E+04	2.44E+04	2.30E+04 NC	
P382	INORG	Lead	7439-92-1	B2	1	1	1.97E+01	1.97E+01	2.00E+01	4.00E+02 NC	
P382	INORG	Manganese	7439-96-5	D	1	1	1.25E+02	1.25E+02	6.76E+02	1.80E+03 NC	
P382	INORG	Mercury	7439-97-6	D	1	1	4.70E-02	4.70E-02	7.05E-02	3.67E+00 NC	
P382	INORG	Nickel	7440-02-0	A	1	1	2.30E+01	2.30E+01	1.83E+01	1.60E+03 NC	2.9E-03
P382	INORG	Thallium	7440-28-0		1	1	1.10E+00	1.10E+00	8.40E-01	5.20E+00 NC	5.0E-02
P382	INORG	Vanadium	7440-62-2		1	1	1.27E+01	1.27E+01	4.18E+01	5.50E+02 NC	
P382	INORG	Zinc	7440-66-6	D	1	1	5.32E+01	5.32E+01	5.48E+01	2.30E+04 NC	
P384/P386	VOC	Acetone	67-64-1	ID	31	15	6.50E-03	4.30E-02		1.60E+03 NC	2.7E-05
P384/P386	VOC	Benzene	71-43-2	A	31	2	4.20E-04	7.90E-04		6.00E+00 C	1.3E-04
P384/P386	VOC	2-Butanone	78-93-3	ID	31	6	2.35E-03	7.20E-03		7.30E+03 NC	9.9E-07
P384/P386	VOC	Carbon Disulfide	75-15-0		31	1	2.10E-03	2.10E-03		3.60E+02 NC	5.8E-06
P384/P386	VOC	Cumene	98-82-8	D	31	2	6.70E-04	2.80E-03		5.70E+02 NC	4.9E-06
P384/P386	VOC	Cyclohexane	110-82-7	ID	31	1	6.50E-04	6.50E-04		9.50E+03 NC	6.8E-08
P384/P386	VOC	1,2-Dichlorobenzene	95-50-1	D	31	2	7.30E-04	1.10E-03		1.10E+03 NC	1.0E-06
P384/P386	VOC	1,3-Dichlorobenzene	541-73-1	D	31	2	4.10E-04	8.30E-03		1.60E+01 NC	5.2E-04
P384/P386	VOC	1,4-Dichlorobenzene	106-46-7	C	31	5	4.10E-04	2.40E-02		3.50E+01 C	6.9E-04
P384/P386	VOC	Ethyl Benzene	100-41-4	D	31	4	4.30E-04	2.80E-03		1.90E+03 NC	1.5E-06
P384/P386	VOC	4-Methyl-2-pentanone	108-10-1	ID	31	2	2.30E-03	2.50E-03		7.90E+02 NC	3.2E-06
P384/P386	VOC	Methylcyclohexane	108-87-2		31	4	4.50E-04	9.50E-03		2.60E+03 NC	3.7E-06
P384/P386	VOC	Tetrachloroethene	127-18-4	C-B2	31	1	8.00E-04	8.00E-04		1.50E+01 C	5.3E-05
P384/P386	VOC	Toluene	108-88-3	D	31	6	5.00E-04	6.20E-03		6.60E+02 NC	9.4E-06
P384/P386	VOC	1,2,4-Trichlorobenzene	120-82-1	D	31	2	8.50E-04	2.20E-02		6.50E+02 NC	3.4E-05
P384/P386	VOC	Xylenes (total)	1330-20-7	ID	31	3	4.60E-03	1.30E-02		2.80E+02 NC	4.6E-05
P384/P386	SVOC	Acenaphthene	83-32-9		31	7	1.80E-02	2.10E-01		3.70E+03 NC	5.7E-05

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P384/P386	SVOC	Acenaphthylene	208-96-8	D	31	3	1.05E-02	4.20E-02		2.30E+03 NC	1.8E-05
P384/P386	SVOC	Anthracene	120-12-7	D	31	12	9.20E-03	1.47E-01		2.20E+04 NC	6.7E-06
P384/P386	SVOC	Benzaldehyde	100-52-7		30	1	4.20E-02	4.20E-02		6.10E+03 NC	6.9E-06
P384/P386	SVOC	Benzo(a)anthracene	56-55-3	B2	31	21	1.90E-02	5.70E-01		6.20E+00 C	9.2E-02
P384/P386	SVOC	Benzo(a)pyrene	50-32-8	B2	31	22	1.90E-02	5.30E-01		6.20E-01 C	8.5E-01
P384/P386	SVOC	Benzo(b)fluoranthene	205-99-2	B2	31	23	2.10E-02	5.80E-01		6.20E+00 C	9.4E-02
P384/P386	SVOC	Benzo(g,h,i)perylene	191-24-2	D	31	19	2.30E-02	3.10E-01		2.30E+03 NC	1.3E-04
P384/P386	SVOC	Benzo(k)fluoranthene	207-08-9	B2	31	15	1.12E-02	3.20E-01		6.20E+01 C	5.2E-03
P384/P386	SVOC	Biphenyl	92-52-4	D	31	1	4.90E-02	4.90E-02		3.00E+03 NC	1.6E-05
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	31	11	2.40E-02	3.50E-01		3.50E+02 C	1.0E-03
P384/P386	SVOC	Butylbenzylphthalate	85-68-7	C	31	2	9.10E-02	4.70E-01		1.20E+04 NC	3.9E-05
P384/P386	SVOC	Caprolactam	105-60-2		31	2	1.08E-02	2.00E-02		3.10E+04 NC	6.5E-07
P384/P386	SVOC	Carbazole	86-74-8	B2	31	6	3.60E-02	1.10E-01		2.40E+02 C	4.6E-04
P384/P386	SVOC	Chrysene	218-01-9	B2	31	22	2.10E-02	6.30E-01		6.20E+02 C	1.0E-03
P384/P386	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	31	8	1.80E-02	8.80E-02		6.20E-01 C	1.4E-01
P384/P386	SVOC	Dibenzofuran	132-64-9	D	31	6	2.00E-02	2.00E-01		2.90E+02 NC	6.9E-04
P384/P386	SVOC	2,4-Dimethylphenol	105-67-9		31	5	1.85E-02	4.40E-01		1.20E+03 NC	3.7E-04
P384/P386	SVOC	Di-n-butylphthalate	84-74-2	D	31	2	3.71E-02	9.80E-02		6.10E+03 NC	1.6E-05
P384/P386	SVOC	Di-n-octylphthalate	117-84-0		31	3	4.90E-02	4.30E-01		2.40E+03 NC	1.8E-04
P384/P386	SVOC	Fluoranthene	206-44-0	D	31	26	1.70E-02	1.30E+00		2.30E+03 NC	5.7E-04
P384/P386	SVOC	Fluorene	86-73-7	D	31	7	2.40E-02	2.40E-01		2.70E+03 NC	8.9E-05
P384/P386	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	31	18	1.26E-02	2.90E-01		6.20E+00 C	4.7E-02
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	31	5	1.60E-02	1.90E-01		5.60E+01 NC	3.4E-03
P384/P386	SVOC	Methylphenol (total)	1319-77-3		31	4	1.26E-02	1.74E-01		3.10E+02 NC	5.6E-04
P384/P386	SVOC	Naphthalene	91-20-3	C	31	6	2.30E-02	5.70E-01		5.60E+01 NC	1.0E-02
P384/P386	SVOC	Phenanthrene	85-01-8	D	31	21	2.20E-02	8.40E-01		2.30E+03 NC	3.7E-04
P384/P386	SVOC	Phenol	108-95-2	ID	31	4	7.60E-02	1.10E+00		3.70E+04 NC	3.0E-05
P384/P386	SVOC	Pyrene	129-00-0	D	31	23	1.80E-02	1.10E+00		2.30E+03 NC	4.8E-04
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	31	30	4.94E-02	3.17E+02		2.00E+00 C	1.6E+02
P384/P386	INORG	Aluminum	7429-90-5	D	31	31	5.79E+03	5.74E+04	1.48E+04	7.60E+04 NC	5.6E-01
P384/P386	INORG	Antimony	7440-36-0		31	18	3.70E-01	2.70E+00	4.40E-01	3.10E+01 NC	7.3E-02
P384/P386	INORG	Arsenic	7440-38-2	A	31	31	3.00E+00	1.97E+01	1.13E+01	3.90E+00 C	2.2E+00
P384/P386	INORG	Barium	7440-39-3	D	31	31	4.95E+01	3.57E+02	8.38E+01	5.40E+03 NC	5.1E-02
P384/P386	INORG	Beryllium	7440-41-7	B1	31	10	6.00E-01	1.80E+00	5.70E-01	1.50E+02 NC	8.2E-03
P384/P386	INORG	Cadmium	7440-43-9	B1	31	28	8.40E-02	5.30E+00	5.52E-01	3.70E+01 NC	1.3E-01
P384/P386	INORG	Chromium (total)	7440-47-3		31	31	1.20E+01	6.57E+01	2.82E+01	2.20E+02 NC	1.7E-01
P384/P386	INORG	Cobalt	7440-48-4	B1	31	31	3.40E+00	1.83E+01	1.00E+01	1.40E+03 NC	5.9E-03
P384/P386	INORG	Copper	7440-50-8	D	31	31	1.47E+01	1.97E+03	1.89E+01	3.10E+03 NC	6.3E-01

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P384/P386	INORG	Iron	7439-89-6	D	31	31	1.03E+04	4.12E+04	2.44E+04	2.30E+04 NC	7.3E-01
P384/P386	INORG	Lead	7439-92-1	B2	31	31	1.64E+01	1.83E+02	2.00E+01	4.00E+02 NC	4.1E-01
P384/P386	INORG	Manganese	7439-96-5	D	31	31	6.47E+01	8.65E+02	6.76E+02	1.80E+03 NC	1.0E-01
P384/P386	INORG	Mercury	7439-97-6	D	31	31	1.80E-02	2.60E+00	7.05E-02	3.67E+00 NC	6.9E-01
P384/P386	INORG	Nickel	7440-02-0	A	31	31	8.90E+00	1.23E+02	1.83E+01	1.60E+03 NC	6.5E-02
P384/P386	INORG	Selenium	7782-49-2	D	31	2	3.50E-01	3.70E-01	3.96E-01	3.90E+02 NC	
P384/P386	INORG	Silver	7440-22-4	D	31	4	1.30E-01	9.50E-01		3.90E+02 NC	2.4E-03
P384/P386	INORG	Thallium	7440-28-0		31	10	4.70E-01	1.20E+00	8.40E-01	5.20E+00 NC	6.9E-02
P384/P386	INORG	Vanadium	7440-62-2		31	31	9.30E+00	7.92E+01	4.18E+01	5.50E+02 NC	6.8E-02
P384/P386	INORG	Zinc	7440-66-6	D	31	31	4.45E+01	8.18E+02	5.48E+01	2.30E+04 NC	3.3E-02
P398	VOC	Acetone	67-64-1	ID	30	6	5.00E-03	1.20E-02		1.60E+03 NC	7.5E-06
P398	VOC	Benzene	71-43-2	A	30	2	4.00E-04	4.70E-04		6.00E+00 C	7.8E-05
P398	VOC	2-Butanone	78-93-3	ID	30	1	2.60E-03	2.60E-03		7.30E+03 NC	3.6E-07
P398	VOC	Cyclohexane	110-82-7	ID	30	1	5.60E-04	5.60E-04		9.50E+03 NC	5.9E-08
P398	VOC	1,1-Dichloroethene	75-35-4	C	30	1	3.90E-03	3.90E-03		1.20E+02 NC	3.3E-05
P398	VOC	Ethyl Benzene	100-41-4	D	30	1	4.50E-04	4.50E-04		1.90E+03 NC	2.4E-07
P398	VOC	Toluene	108-88-3	D	30	7	4.80E-04	1.30E-03		6.60E+02 NC	2.0E-06
P398	VOC	Trichlorofluoromethane	75-69-4		30	2	3.60E-03	6.50E-03		3.90E+02 NC	1.7E-05
P398	SVOC	Acenaphthene	83-32-9		30	1	2.80E-02	2.80E-02		3.70E+03 NC	7.6E-06
P398	SVOC	Anthracene	120-12-7	D	30	1	5.10E-02	5.10E-02		2.20E+04 NC	2.3E-06
P398	SVOC	Benzo(a)anthracene	56-55-3	B2	30	6	2.10E-02	1.70E-01		6.20E+00 C	2.7E-02
P398	SVOC	Benzo(a)pyrene	50-32-8	B2	30	6	2.30E-02	3.10E-01		6.20E-01 C	5.0E-01
P398	SVOC	Benzo(b)fluoranthene	205-99-2	B2	30	6	2.90E-02	4.00E-01		6.20E+00 C	6.5E-02
P398	SVOC	Benzo(g,h,i)perylene	191-24-2	D	30	6	2.00E-02	4.80E-01		2.30E+03 NC	2.1E-04
P398	SVOC	Benzo(k)fluoranthene	207-08-9	B2	30	5	3.70E-02	1.90E-01		6.20E+01 C	3.1E-03
P398	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	30	2	4.70E-02	6.30E-02		3.50E+02 C	1.8E-04
P398	SVOC	Chrysene	218-01-9	B2	30	6	1.80E-02	1.60E-01		6.20E+02 C	2.6E-04
P398	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	30	3	1.70E-02	8.70E-02		6.20E-01 C	1.4E-01
P398	SVOC	Di-n-butylphthalate	84-74-2	D	30	3	1.90E-02	3.70E-02		6.10E+03 NC	6.1E-06
P398	SVOC	Fluoranthene	206-44-0	D	30	6	3.50E-02	3.10E-01		2.30E+03 NC	1.3E-04
P398	SVOC	Fluorene	86-73-7	D	30	1	1.70E-02	1.70E-02		2.70E+03 NC	6.3E-06
P398	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	30	6	1.60E-02	3.60E-01		6.20E+00 C	5.8E-02
P398	SVOC	Phenanthrene	85-01-8	D	30	5	2.20E-02	2.10E-01		2.30E+03 NC	9.1E-05
P398	SVOC	Pyrene	129-00-0	D	30	6	3.20E-02	2.60E-01		2.30E+03 NC	1.1E-04
P398	P/PCB	PCBs (total)	1336-36-3	B2	28	1	3.35E-02	3.35E-02		2.00E+00 C	1.7E-02
P398	INORG	Aluminum	7429-90-5	D	30	30	3.33E+03	2.24E+04	1.48E+04	7.60E+04 NC	1.0E-01
P398	INORG	Antimony	7440-36-0		30	20	2.90E-01	1.10E+00	4.40E-01	3.10E+01 NC	2.1E-02
P398	INORG	Arsenic	7440-38-2	A	30	30	3.40E+00	1.80E+01	1.13E+01	3.90E+00 C	1.7E+00

**Table 2-1d: Off-Site Subsurface Soil Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Site-Specific Back-ground (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria	
P398	INORG	Barium	7440-39-3	D	30	30	3.43E+01	1.73E+02	8.38E+01	5.40E+03	NC	1.7E-02
P398	INORG	Beryllium	7440-41-7	B1	30	30	2.10E-01	3.40E+00	5.70E-01	1.50E+02	NC	1.9E-02
P398	INORG	Cadmium	7440-43-9	B1	30	21	4.70E-02	4.10E-01	5.52E-01	3.70E+01	NC	
P398	INORG	Chromium (total)	7440-47-3		30	30	9.30E+00	7.88E+01	2.82E+01	2.20E+02	NC	2.3E-01
P398	INORG	Cobalt	7440-48-4	B1	30	30	2.90E+00	4.03E+01	1.00E+01	1.40E+03	NC	2.2E-02
P398	INORG	Copper	7440-50-8	D	30	30	7.50E+00	6.28E+01	1.89E+01	3.10E+03	NC	1.4E-02
P398	INORG	Iron	7439-89-6	D	30	30	7.83E+03	5.31E+04	2.44E+04	2.30E+04	NC	1.2E+00
P398	INORG	Lead	7439-92-1	B2	30	30	6.00E+00	7.29E+02	2.00E+01	4.00E+02	NC	1.8E+00
P398	INORG	Manganese	7439-96-5	D	30	30	2.70E+01	1.51E+03	6.76E+02	1.80E+03	NC	4.6E-01
P398	INORG	Mercury	7439-97-6	D	30	17	1.80E-02	2.10E-01	7.05E-02	3.67E+00	NC	3.8E-02
P398	INORG	Nickel	7440-02-0	A	30	30	6.00E+00	9.87E+01	1.83E+01	1.60E+03	NC	5.0E-02
P398	INORG	Selenium	7782-49-2	D	30	13	4.60E-01	1.10E+00	3.96E-01	3.90E+02	NC	1.8E-03
P398	INORG	Thallium	7440-28-0		30	10	4.50E-01	1.10E+00	8.40E-01	5.20E+00	NC	5.0E-02
P398	INORG	Vanadium	7440-62-2		30	30	9.00E+00	6.94E+01	4.18E+01	5.50E+02	NC	5.0E-02
P398	INORG	Zinc	7440-66-6	D	30	30	1.85E+01	9.33E+01	5.48E+01	2.30E+04	NC	1.7E-03
	Notes:											
	Only constituents detected at each area are shown.											
	Shaded cells represent ratios of conc to the screening criteria greater than 1.											
	Ratios are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.											
	The Screening Criteria for residential and industrial soil is the lower of the integrated Screening Criteria at:											
		target cancer risk =	1E-05									
		target hazard quotient =	1									
	The Screening Criteria for Pyrene were used as surrogates for Phenanthrene and Benzo(g,h,i)perylene.											
	The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.											
	The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).											
	The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Criteria for 4-Methylphenol.											
	The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs) for cancer effects											
	and Aroclor 1254 for noncancer effects.											
	The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.											
	The Screening Criteria for Mercury was calculated by ENVIRON to account for the vapor inhalation pathway using:											
	EPA Region 9 equations, RfC from IRIS, and chemical properties from EPA's Soil Screening Guidance.											
	C - The Screening Criterion is based on cancer risk.											
	NC - The Screening Criterion is based on noncancer effects.											
	Chem Group - Chemical Group											
	Carc Class - EPA Weight-of-Evidence Cancer Classification											

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A001	Deep_Bedrock	VOC	2-Butanone	78-93-3	T	ID	6	2	3.20E-03	3.50E-03	2.20E+01	1.6E-04
ON	A001	Deep_Bedrock	VOC	Carbon Disulfide	75-15-0	T		6	1	2.70E-04	2.70E-04	3.70E+00	7.3E-05
ON	A001	Deep_Bedrock	VOC	Chloroform	67-66-3	T	B2	6	4	3.50E-04	5.10E-03	1.00E-01	5.1E-02
ON	A001	Deep_Bedrock	VOC	4-Methyl-2-pentanone	108-10-1	T	ID	6	2	5.40E-04	6.20E-04	2.90E+00	2.1E-04
ON	A001	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	6	6	4.90E-04	4.70E-03	1.00E+00	4.7E-03
ON	A001	Deep_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	6	4	7.60E-04	1.10E-02	2.90E+01	3.8E-04
ON	A001	Deep_Bedrock	SVOC	2,4-Dimethylphenol	105-67-9	T		6	1	3.40E-03	3.40E-03	7.30E-01	4.7E-03
ON	A001	Deep_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	6	4	6.40E-04	3.10E-03	3.70E+00	8.4E-04
ON	A001	Deep_Bedrock	SVOC	2-Methylnaphthalene	91-57-6	T	ID	6	1	1.20E-03	1.20E-03	7.30E-01	1.6E-03
ON	A001	Deep_Bedrock	INORG	Arsenic	7440-38-2	T	A	6	3	2.50E-03	4.70E-03	5.00E-02	9.4E-02
ON	A001	Deep_Bedrock	INORG	Arsenic	7440-38-2	D	A	6	1	4.70E-03	4.70E-03	5.00E-02	9.4E-02
ON	A001	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	6	6	3.20E-02	8.00E-02	2.00E+00	4.0E-02
ON	A001	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	6	6	3.10E-02	8.60E-02	2.00E+00	4.3E-02
ON	A001	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	T		6	1	2.50E-03	2.50E-03	1.00E-01	2.5E-02
ON	A001	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	6	6	1.60E-01	8.10E-01	1.10E+01	7.4E-02
ON	A001	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	6	6	8.80E-02	6.00E-01	1.10E+01	5.5E-02
ON	A001	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	6	4	3.20E-03	1.10E-02	8.80E-01	1.3E-02
ON	A001	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	6	3	1.80E-03	1.00E-02	8.80E-01	1.1E-02
ON	A001	Deep_Bedrock	INORG	Mercury	7439-97-6	D	D	6	1	1.10E-04	1.10E-04	2.00E-03	5.5E-02
ON	A001	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	6	1	3.00E-03	3.00E-03	7.30E-01	4.1E-03
ON	A001	Deep_Bedrock	INORG	Zinc	7440-66-6	T	D	6	3	1.40E-02	2.00E-02	1.10E+01	1.8E-03
ON	A001	Deep_Bedrock	INORG	Zinc	7440-66-6	D	D	6	1	1.05E-02	1.05E-02	1.10E+01	9.5E-04
ON	A001	Overburden	VOC	2-Butanone	78-93-3	T	ID	1	1	7.30E-04	7.30E-04	2.20E+01	3.3E-05
ON	A001	Overburden	INORG	Barium	7440-39-3	T	D	1	1	1.50E-01	1.50E-01	2.00E+00	7.5E-02
ON	A001	Overburden	INORG	Barium	7440-39-3	D	D	1	1	1.80E-01	1.80E-01	2.00E+00	9.0E-02
ON	A001	Overburden	INORG	Cadmium	7440-43-9	T	B1	1	1	7.00E-04	7.00E-04	5.00E-03	1.4E-01
ON	A001	Overburden	INORG	Cadmium	7440-43-9	D	B1	1	1	6.70E-04	6.70E-04	5.00E-03	1.3E-01
ON	A001	Overburden	INORG	Chromium (total)	7440-47-3	T		1	1	6.90E-03	6.90E-03	1.00E-01	6.9E-02
ON	A001	Overburden	INORG	Cobalt	7440-48-4	T	B1	1	1	1.80E-01	1.80E-01	7.30E-01	2.5E-01
ON	A001	Overburden	INORG	Cobalt	7440-48-4	D	B1	1	1	1.10E-01	1.10E-01	7.30E-01	1.5E-01
ON	A001	Overburden	INORG	Copper	7440-50-8	T	D	1	1	3.50E-02	3.50E-02	1.30E+00	2.7E-02
ON	A001	Overburden	INORG	Copper	7440-50-8	D	D	1	1	1.70E-02	1.70E-02	1.30E+00	1.3E-02
ON	A001	Overburden	INORG	Iron	7439-89-6	T	D	1	1	1.40E-01	1.40E-01	1.10E+01	1.3E-02
ON	A001	Overburden	INORG	Manganese	7439-96-5	T	D	1	1	7.90E-01	7.90E-01	8.80E-01	9.0E-01
ON	A001	Overburden	INORG	Manganese	7439-96-5	D	D	1	1	5.10E-01	5.10E-01	8.80E-01	5.8E-01
ON	A001	Overburden	INORG	Mercury	7439-97-6	T	D	1	1	1.50E-04	1.50E-04	2.00E-03	7.5E-02
ON	A001	Overburden	INORG	Mercury	7439-97-6	D	D	1	1	1.30E-04	1.30E-04	2.00E-03	6.5E-02
ON	A001	Overburden	INORG	Nickel	7440-02-0	T	A	1	1	1.40E-01	1.40E-01	7.30E-01	1.9E-01
ON	A001	Overburden	INORG	Nickel	7440-02-0	D	A	1	1	1.30E-01	1.30E-01	7.30E-01	1.8E-01
ON	A001	Overburden	INORG	Zinc	7440-66-6	T	D	1	1	6.60E-02	6.60E-02	1.10E+01	6.0E-03
ON	A001	Overburden	INORG	Zinc	7440-66-6	D	D	1	1	5.40E-02	5.40E-02	1.10E+01	4.9E-03
ON	A001	Shallow_Bedrock	VOC	2-Butanone	78-93-3	T	ID	3	1	1.10E-02	1.10E-02	2.20E+01	5.0E-04

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A001	Shallow_Bedrock	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	3	1	2.00E-03	2.00E-03	7.00E-02	2.9E-02
ON	A001	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	3	3	7.90E-04	8.40E-03	1.00E+00	8.4E-03
ON	A001	Shallow_Bedrock	VOC	Vinyl Chloride	75-01-4	T	A	3	1	8.40E-03	8.40E-03	2.00E-03	4.2E+00
ON	A001	Shallow_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	3	1	1.60E-03	1.60E-03	2.90E+01	5.5E-05
ON	A001	Shallow_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	3	1	9.00E-04	9.00E-04	3.70E+00	2.4E-04
ON	A001	Shallow_Bedrock	INORG	Arsenic	7440-38-2	D	A	3	1	3.30E-03	3.30E-03	5.00E-02	6.6E-02
ON	A001	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	3	3	4.60E-02	1.90E-01	2.00E+00	9.5E-02
ON	A001	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	3	3	5.70E-02	1.80E-01	2.00E+00	9.0E-02
ON	A001	Shallow_Bedrock	INORG	Cobalt	7440-48-4	T	B1	3	1	9.80E-03	9.80E-03	7.30E-01	1.3E-02
ON	A001	Shallow_Bedrock	INORG	Cobalt	7440-48-4	D	B1	3	1	1.00E-02	1.00E-02	7.30E-01	1.4E-02
ON	A001	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	3	3	2.40E-01	1.90E+00	1.10E+01	1.7E-01
ON	A001	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	3	3	2.40E-01	4.10E+00	1.10E+01	3.7E-01
ON	A001	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	3	3	1.10E-01	4.30E-01	8.80E-01	4.9E-01
ON	A001	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	3	3	1.80E-01	4.00E-01	8.80E-01	4.5E-01
ON	A001	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	3	1	1.70E-02	1.70E-02	7.30E-01	2.3E-02
ON	A001	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	3	2	8.00E-03	1.70E-02	7.30E-01	2.3E-02
ON	A001	Shallow_Bedrock	INORG	Thallium	7440-28-0	T		3	1	2.20E-03	2.20E-03	2.00E-03	1.1E+00
ON	A001	Shallow_Bedrock	INORG	Thallium	7440-28-0	D		3	1	2.00E-03	2.00E-03	2.00E-03	1.0E+00
ON	A001	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	3	1	2.10E-02	2.10E-02	1.10E+01	1.9E-03
ON	A001	Shallow_Bedrock	INORG	Zinc	7440-66-6	D	D	3	1	2.90E-02	2.90E-02	1.10E+01	2.6E-03
ON	A004	Overburden	VOC	Benzene	71-43-2	T	A	1	1	1.55E-03	1.55E-03	5.00E-03	3.1E-01
ON	A004	Overburden	VOC	Chlorobenzene	108-90-7	T	D	1	1	1.45E-01	1.45E-01	1.00E-01	1.5E+00
ON	A004	Overburden	VOC	1,2-Dichlorobenzene	95-50-1	T	D	1	1	3.70E-03	3.70E-03	6.00E-01	6.2E-03
ON	A004	Overburden	VOC	Vinyl Chloride	75-01-4	T	A	1	1	5.30E-03	5.30E-03	2.00E-03	2.7E+00
ON	A004	Overburden	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	2.29E-03	2.29E-03	5.00E-04	4.6E+00
ON	A004	Overburden	P/PCB	PCBs (total)	1336-36-3	D	B2	1	1	1.11E-03	1.11E-03	5.00E-04	2.2E+00
ON	A004	Overburden	INORG	Barium	7440-39-3	T	D	1	1	3.65E-02	3.65E-02	2.00E+00	1.8E-02
ON	A004	Overburden	INORG	Barium	7440-39-3	D	D	1	1	3.70E-02	3.70E-02	2.00E+00	1.9E-02
ON	A004	Overburden	INORG	Chromium (total)	7440-47-3	T		1	1	3.70E-03	3.70E-03	1.00E-01	3.7E-02
ON	A004	Overburden	INORG	Iron	7439-89-6	T	D	1	1	4.70E+00	4.70E+00	1.10E+01	4.3E-01
ON	A004	Overburden	INORG	Iron	7439-89-6	D	D	1	1	4.65E+00	4.65E+00	1.10E+01	4.2E-01
ON	A004	Overburden	INORG	Manganese	7439-96-5	T	D	1	1	6.65E-02	6.65E-02	8.80E-01	7.6E-02
ON	A004	Overburden	INORG	Manganese	7439-96-5	D	D	1	1	6.45E-02	6.45E-02	8.80E-01	7.3E-02
ON	A004	Overburden	INORG	Mercury	7439-97-6	T	D	1	1	6.73E-05	6.73E-05	2.00E-03	3.4E-02
ON	A004	Overburden	INORG	Nickel	7440-02-0	T	A	1	1	2.18E-03	2.18E-03	7.30E-01	3.0E-03
ON	A007	Overburden	VOC	Acetone	67-64-1	T	ID	1	1	3.20E-03	3.20E-03	3.70E+00	8.6E-04
ON	A007	Overburden	P/PCB	PCBs (total)	1336-36-3	T	B2	2	2	6.31E-04	6.86E-04	5.00E-04	1.4E+00
ON	A007	Overburden	P/PCB	PCBs (total)	1336-36-3	D	B2	2	1	1.62E-04	1.62E-04	5.00E-04	3.2E-01
ON	A007	Overburden	INORG	Aluminum	7429-90-5	T	D	1	1	9.50E-02	9.50E-02	3.70E+00	2.6E-03
ON	A007	Overburden	INORG	Barium	7440-39-3	T	D	1	1	4.90E-02	4.90E-02	2.00E+00	2.5E-02
ON	A007	Overburden	INORG	Barium	7440-39-3	D	D	1	1	4.50E-02	4.50E-02	2.00E+00	2.3E-02
ON	A007	Overburden	INORG	Copper	7440-50-8	T	D	1	1	4.90E-03	4.90E-03	1.30E+00	3.8E-03

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A007	Overburden	INORG	Copper	7440-50-8	D	D	1	1	5.10E-03	5.10E-03	1.30E+00	3.9E-03
ON	A007	Overburden	INORG	Iron	7439-89-6	T	D	1	1	1.60E-01	1.60E-01	1.10E+01	1.5E-02
ON	A007	Overburden	INORG	Manganese	7439-96-5	T	D	1	1	7.50E-02	7.50E-02	8.80E-01	8.5E-02
ON	A007	Overburden	INORG	Manganese	7439-96-5	D	D	1	1	2.40E-02	2.40E-02	8.80E-01	2.7E-02
ON	A007	Overburden	INORG	Thallium	7440-28-0	D		1	1	5.50E-03	5.50E-03	2.00E-03	2.8E+00
ON	A007	Overburden	INORG	Zinc	7440-66-6	T	D	1	1	2.80E-02	2.80E-02	1.10E+01	2.5E-03
ON	A007	Overburden	INORG	Zinc	7440-66-6	D	D	1	1	1.70E-02	1.70E-02	1.10E+01	1.5E-03
ON	A008	Overburden	VOC	Acetone	67-64-1	T	ID	1	1	8.28E-04	8.28E-04	3.70E+00	2.2E-04
ON	A008	Overburden	VOC	Benzene	71-43-2	T	A	1	1	1.75E-04	1.75E-04	5.00E-03	3.5E-02
ON	A008	Overburden	VOC	Chlorobenzene	108-90-7	T	D	1	1	7.55E-03	7.55E-03	1.00E-01	7.6E-02
ON	A008	Overburden	VOC	1,2-Dichlorobenzene	95-50-1	T	D	1	1	2.45E-04	2.45E-04	6.00E-01	4.1E-04
ON	A008	Overburden	VOC	1,3-Dichlorobenzene	541-73-1	T	D	1	1	2.70E-03	2.70E-03	3.30E-02	8.2E-02
ON	A008	Overburden	VOC	1,4-Dichlorobenzene	106-46-7	T	C	1	1	5.75E-03	5.75E-03	7.50E-02	7.7E-02
ON	A008	Overburden	VOC	1,1-Dichloroethane	75-34-3	T	C	1	1	7.35E-04	7.35E-04	3.70E+00	2.0E-04
ON	A008	Overburden	VOC	Toluene	108-88-3	T	D	1	1	2.35E-04	2.35E-04	1.00E+00	2.4E-04
ON	A008	Overburden	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1	1	1.55E-02	1.55E-02	6.00E-03	2.6E+00
ON	A008	Overburden	SVOC	2,4-Dimethylphenol	105-67-9	T		1	1	1.35E-03	1.35E-03	7.30E-01	1.8E-03
ON	A008	Overburden	SVOC	Di-n-octylphthalate	117-84-0	T		1	1	1.80E-02	1.80E-02	1.50E+00	1.2E-02
ON	A008	Overburden	SVOC	Phenol	108-95-2	T	ID	1	1	1.54E-02	1.54E-02	2.20E+01	7.0E-04
ON	A008	Overburden	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	5.81E+00	5.81E+00	5.00E-04	1.2E+04
ON	A008	Overburden	INORG	Aluminum	7429-90-5	T	D	1	1	2.20E-02	2.20E-02	3.70E+01	5.9E-04
ON	A008	Overburden	INORG	Barium	7440-39-3	T	D	1	1	2.10E-01	2.10E-01	2.00E+00	1.1E-01
ON	A008	Overburden	INORG	Iron	7439-89-6	T	D	1	1	4.95E+00	4.95E+00	1.10E+01	4.5E-01
ON	A008	Overburden	INORG	Manganese	7439-96-5	T	D	1	1	2.00E+00	2.00E+00	8.80E-01	2.3E+00
ON	A008	Overburden	INORG	Mercury	7439-97-6	T	D	1	1	1.45E-04	1.45E-04	2.00E-03	7.3E-02
ON	A008	Overburden	INORG	Thallium	7440-28-0	T		1	1	4.45E-03	4.45E-03	2.00E-03	2.2E+00
ON	A008	Shallow_Bedrock	VOC	Chlorobenzene	108-90-7	T	D	3	2	3.90E-04	1.70E-03	1.00E-01	1.7E-02
ON	A008	Shallow_Bedrock	VOC	1,2-Dichlorobenzene	95-50-1	T	D	3	1	1.80E-04	1.80E-04	6.00E-01	3.0E-04
ON	A008	Shallow_Bedrock	VOC	1,3-Dichlorobenzene	541-73-1	T	D	3	2	1.55E-04	1.00E-03	3.30E-02	3.0E-02
ON	A008	Shallow_Bedrock	VOC	1,4-Dichlorobenzene	106-46-7	T	C	3	2	4.00E-04	2.20E-03	7.50E-02	2.9E-02
ON	A008	Shallow_Bedrock	SVOC	Acenaphthene	83-32-9	T		3	1	1.90E-03	1.90E-03	2.20E+00	8.6E-04
ON	A008	Shallow_Bedrock	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	3	2	4.50E-04	6.70E-04	6.00E-03	1.1E-01
ON	A008	Shallow_Bedrock	SVOC	Phenol	108-95-2	T	ID	3	1	9.75E-03	9.75E-03	2.20E+01	4.4E-04
ON	A008	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	T	B2	6	6	1.32E-02	8.28E-02	5.00E-04	1.7E+02
ON	A008	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	D	B2	6	1	1.30E-03	1.30E-03	5.00E-04	2.6E+00
ON	A008	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	3	3	6.10E-02	8.70E-02	2.00E+00	4.4E-02
ON	A008	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	3	3	5.10E-02	8.80E-02	2.00E+00	4.4E-02
ON	A008	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	T		3	2	3.80E-03	1.20E-02	1.00E-01	1.2E-01
ON	A008	Shallow_Bedrock	INORG	Copper	7440-50-8	T	D	3	1	1.50E-02	1.50E-02	1.30E+00	1.2E-02
ON	A008	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	3	1	1.40E-01	1.40E-01	1.10E+01	1.3E-02
ON	A008	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	3	3	1.40E-02	2.40E-02	8.80E-01	2.7E-02
ON	A008	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	3	3	9.30E-03	2.10E-02	8.80E-01	2.4E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A008	Shallow_Bedrock	INORG	Mercury	7439-97-6	D	D	3	1	9.60E-05	9.60E-05	2.00E-03	4.8E-02
ON	A008	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	3	3	3.10E-03	1.10E-02	7.30E-01	1.5E-02
ON	A008	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	3	2	3.65E-03	9.40E-03	7.30E-01	1.3E-02
ON	A008	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	3	1	1.08E-02	1.08E-02	1.10E+01	9.8E-04
ON	A011	Shallow_Bedrock	SVOC	Caprolactam	105-60-2	T		1	1	9.20E-02	9.20E-02	1.80E+01	5.1E-03
ON	A011	Shallow_Bedrock	SVOC	Phenol	108-95-2	T	ID	1	1	9.00E-03	9.00E-03	2.20E+01	4.1E-04
ON	A011	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	7.86E-04	7.86E-04	5.00E-04	1.6E+00
ON	A011	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	6.60E-02	6.60E-02	2.00E+00	3.3E-02
ON	A011	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	1.63E+01	1.63E+01	1.10E+01	1.5E+00
ON	A011	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	1.60E+01	1.60E+01	1.10E+01	1.5E+00
ON	A011	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	1.90E-01	1.90E-01	8.80E-01	2.2E-01
ON	A011	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	2.00E-01	2.00E-01	8.80E-01	2.3E-01
ON	A015	Deep_Bedrock	VOC	Bromodichloromethane	75-27-4	T	B2	2	1	9.70E-04	9.70E-04	1.00E-01	9.7E-03
ON	A015	Deep_Bedrock	VOC	2-Butanone	78-93-3	T	ID	2	1	8.80E-04	8.80E-04	2.20E+01	4.0E-05
ON	A015	Deep_Bedrock	VOC	Chloroform	67-66-3	T	B2	2	1	6.00E-03	6.00E-03	1.00E-01	6.0E-02
ON	A015	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	2	2	3.90E-03	9.70E-03	1.00E+00	9.7E-03
ON	A015	Deep_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	2	1	1.60E-03	1.60E-03	3.70E+00	4.3E-04
ON	A015	Deep_Bedrock	INORG	Arsenic	7440-38-2	T	A	2	1	3.80E-03	3.80E-03	5.00E-02	7.6E-02
ON	A015	Deep_Bedrock	INORG	Arsenic	7440-38-2	D	A	2	1	7.10E-03	7.10E-03	5.00E-02	1.4E-01
ON	A015	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	2	2	4.40E-02	6.00E-02	2.00E+00	3.0E-02
ON	A015	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	2	2	5.00E-02	6.70E-02	2.00E+00	3.4E-02
ON	A015	Deep_Bedrock	INORG	Cobalt	7440-48-4	T	B1	2	2	8.60E-04	1.70E-03	7.30E-01	2.3E-03
ON	A015	Deep_Bedrock	INORG	Cobalt	7440-48-4	D	B1	2	2	1.70E-03	2.00E-03	7.30E-01	2.7E-03
ON	A015	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	2	1	1.40E+00	1.40E+00	1.10E+01	1.3E-01
ON	A015	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	2	1	1.50E+00	1.50E+00	1.10E+01	1.4E-01
ON	A015	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	2	2	3.80E-02	4.40E-02	8.80E-01	5.0E-02
ON	A015	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	2	2	4.00E-02	5.00E-02	8.80E-01	5.7E-02
ON	A015	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	2	1	1.10E-02	1.10E-02	7.30E-01	1.5E-02
ON	A015	Deep_Bedrock	INORG	Nickel	7440-02-0	D	A	2	1	1.20E-02	1.20E-02	7.30E-01	1.6E-02
ON	A015	Deep_Bedrock	INORG	Zinc	7440-66-6	T	D	2	1	3.80E-02	3.80E-02	1.10E+01	3.5E-03
ON	A015	Deep_Bedrock	INORG	Zinc	7440-66-6	D	D	2	1	3.40E-02	3.40E-02	1.10E+01	3.1E-03
ON	A015	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	8.00E-02	8.00E-02	2.00E+00	4.0E-02
ON	A015	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	8.10E-02	8.10E-02	2.00E+00	4.1E-02
ON	A015	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	3.70E-01	3.70E-01	1.10E+01	3.4E-02
ON	A015	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	1.40E-02	1.40E-02	8.80E-01	1.6E-02
ON	A015	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	1.40E-02	1.40E-02	8.80E-01	1.6E-02
ON	A015	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	3.10E-03	3.10E-03	7.30E-01	4.2E-03
ON	A015	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	1	1	4.20E-03	4.20E-03	7.30E-01	5.8E-03
ON	A015	Shallow_Bedrock	INORG	Vanadium	7440-62-2	T		1	1	9.90E-04	9.90E-04	2.60E-01	3.8E-03
ON	A015	Shallow_Bedrock	INORG	Vanadium	7440-62-2	D		1	1	9.40E-04	9.40E-04	2.60E-01	3.6E-03
ON	A021	Overburden	INORG	Aluminum	7429-90-5	T	D	2	1	2.40E-01	2.40E-01	3.70E+01	6.5E-03
ON	A021	Overburden	INORG	Arsenic	7440-38-2	T	A	2	1	2.90E-03	2.90E-03	5.00E-02	5.8E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A021	Overburden	INORG	Arsenic	7440-38-2	D	A	2	1	5.20E-03	5.20E-03	5.00E-02	1.0E-01
ON	A021	Overburden	INORG	Barium	7440-39-3	T	D	2	2	2.90E-02	2.10E-01	2.00E+00	1.1E-01
ON	A021	Overburden	INORG	Barium	7440-39-3	D	D	2	2	3.40E-02	2.10E-01	2.00E+00	1.1E-01
ON	A021	Overburden	INORG	Cobalt	7440-48-4	T	B1	2	2	3.90E-03	1.70E-02	7.30E-01	2.3E-02
ON	A021	Overburden	INORG	Cobalt	7440-48-4	D	B1	2	2	4.00E-03	1.90E-02	7.30E-01	2.6E-02
ON	A021	Overburden	INORG	Iron	7439-89-6	T	D	2	1	3.30E+00	3.30E+00	1.10E+01	3.0E-01
ON	A021	Overburden	INORG	Iron	7439-89-6	D	D	2	1	3.30E+00	3.30E+00	1.10E+01	3.0E-01
ON	A021	Overburden	INORG	Manganese	7439-96-5	T	D	2	2	6.20E-02	2.20E+00	8.80E-01	2.5E+00
ON	A021	Overburden	INORG	Manganese	7439-96-5	D	D	2	2	6.70E-02	2.20E+00	8.80E-01	2.5E+00
ON	A021	Overburden	INORG	Nickel	7440-02-0	T	A	2	2	3.30E-03	1.30E-01	7.30E-01	1.8E-01
ON	A021	Overburden	INORG	Nickel	7440-02-0	D	A	2	2	3.20E-03	1.40E-01	7.30E-01	1.9E-01
ON	A021	Overburden	INORG	Zinc	7440-66-6	T	D	2	1	5.20E-02	5.20E-02	1.10E+01	4.7E-03
ON	A021	Overburden	INORG	Zinc	7440-66-6	D	D	2	1	6.60E-02	6.60E-02	1.10E+01	6.0E-03
ON	A021	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	1	1	3.70E-04	3.70E-04	1.00E+00	3.7E-04
ON	A021	Shallow_Bedrock	INORG	Arsenic	7440-38-2	T	A	1	1	3.60E-03	3.60E-03	5.00E-02	7.2E-02
ON	A021	Shallow_Bedrock	INORG	Cadmium	7440-43-9	T	B1	1	1	4.00E-04	4.00E-04	5.00E-03	8.0E-02
ON	A021	Shallow_Bedrock	INORG	Cadmium	7440-43-9	D	B1	1	1	5.70E-04	5.70E-04	5.00E-03	1.1E-01
ON	A021	Shallow_Bedrock	INORG	Cobalt	7440-48-4	D	B1	1	1	1.60E-03	1.60E-03	7.30E-01	2.2E-03
ON	A021	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	1.33E+01	1.33E+01	1.10E+01	1.2E+00
ON	A021	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	1.70E+01	1.70E+01	1.10E+01	1.5E+00
ON	A021	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	2.30E-01	2.30E-01	8.80E-01	2.6E-01
ON	A021	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	2.60E-01	2.60E-01	8.80E-01	3.0E-01
ON	A021	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	5.60E-03	5.60E-03	7.30E-01	7.7E-03
ON	A021	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	1	1	2.90E-02	2.90E-02	7.30E-01	4.0E-02
ON	A021	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	1	1	2.00E-02	2.00E-02	1.10E+01	1.8E-03
ON	Monitoring_Well	Deep_Bedrock	VOC	Acetone	67-64-1	T	ID	26	2	1.20E-03	2.50E-03	3.70E+00	6.8E-04
ON	Monitoring_Well	Deep_Bedrock	VOC	Bromodichloromethane	75-27-4	T	B2	26	2	9.70E-04	2.20E-03	1.00E-01	2.2E-02
ON	Monitoring_Well	Deep_Bedrock	VOC	2-Butanone	78-93-3	T	ID	26	6	6.70E-04	4.80E-03	2.20E+01	2.2E-04
ON	Monitoring_Well	Deep_Bedrock	VOC	Carbon Disulfide	75-15-0	T		26	4	2.40E-04	3.50E-04	3.70E+00	9.5E-05
ON	Monitoring_Well	Deep_Bedrock	VOC	Chloroform	67-66-3	T	B2	26	11	3.50E-04	1.00E-02	1.00E-01	1.0E-01
ON	Monitoring_Well	Deep_Bedrock	VOC	Methyl Acetate	79-20-9	T		26	1	3.30E-03	3.30E-03	3.70E+01	8.9E-05
ON	Monitoring_Well	Deep_Bedrock	VOC	4-Methyl-2-pentanone	108-10-1	T	ID	26	3	5.40E-04	8.80E-04	2.90E+00	3.0E-04
ON	Monitoring_Well	Deep_Bedrock	VOC	Methylene Chloride	75-09-2	T	B2	26	1	3.20E-04	3.20E-04	5.00E-03	6.4E-02
ON	Monitoring_Well	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	26	21	4.90E-04	6.60E-02	1.00E+00	6.6E-02
ON	Monitoring_Well	Deep_Bedrock	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	26	3	3.10E-03	4.50E-03	6.00E-03	7.5E-01
ON	Monitoring_Well	Deep_Bedrock	SVOC	Caprolactam	105-60-2	T		26	2	1.00E-03	1.80E-02	1.80E+01	1.0E-03
ON	Monitoring_Well	Deep_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	26	15	5.43E-04	5.90E-02	2.90E+01	2.0E-03
ON	Monitoring_Well	Deep_Bedrock	SVOC	2,4-Dimethylphenol	105-67-9	T		26	1	3.40E-03	3.40E-03	7.30E-01	4.7E-03
ON	Monitoring_Well	Deep_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	26	13	6.40E-04	1.90E-02	3.70E+00	5.1E-03
ON	Monitoring_Well	Deep_Bedrock	SVOC	2-Methylnaphthalene	91-57-6	T	ID	26	1	1.20E-03	1.20E-03	7.30E-01	1.6E-03
ON	Monitoring_Well	Deep_Bedrock	SVOC	Methylphenol (total)	1319-77-3	T		26	1	9.60E-03	9.60E-03	1.80E-01	5.3E-02
ON	Monitoring_Well	Deep_Bedrock	SVOC	Phenol	108-95-2	T	ID	26	1	6.30E-02	6.30E-02	2.20E+01	2.9E-03

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	Monitoring_Well	Deep_Bedrock	INORG	Aluminum	7429-90-5	T	D	26	1	3.89E-01	3.89E-01	3.70E+01	1.1E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Arsenic	7440-38-2	D	A	26	8	2.30E-03	1.30E-02	5.00E-02	2.6E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Arsenic	7440-38-2	T	A	26	7	2.50E-03	1.20E-02	5.00E-02	2.4E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	26	26	3.10E-02	1.50E-01	2.00E+00	7.5E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	26	26	3.20E-02	2.10E-01	2.00E+00	1.1E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Beryllium	7440-41-7	T	B1	26	1	6.20E-04	6.20E-04	4.00E-03	1.6E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Cadmium	7440-43-9	D	B1	26	1	3.20E-04	3.20E-04	5.00E-03	6.4E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	D		26	5	7.50E-03	4.30E-01	1.00E-01	4.3E+00
ON	Monitoring_Well	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	T		26	4	2.50E-03	2.10E-01	1.00E-01	2.1E+00
ON	Monitoring_Well	Deep_Bedrock	INORG	Cobalt	7440-48-4	D	B1	26	6	8.70E-04	4.40E-03	7.30E-01	6.0E-03
ON	Monitoring_Well	Deep_Bedrock	INORG	Cobalt	7440-48-4	T	B1	26	6	8.60E-04	4.00E-03	7.30E-01	5.5E-03
ON	Monitoring_Well	Deep_Bedrock	INORG	Copper	7440-50-8	D	D	26	1	1.78E-03	1.78E-03	1.30E+00	1.4E-03
ON	Monitoring_Well	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	26	22	8.80E-02	1.80E+00	1.10E+01	1.6E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	26	25	5.60E-02	2.20E+00	1.10E+01	2.0E-01
ON	Monitoring_Well	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	26	20	1.80E-03	6.00E-02	8.80E-01	6.8E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	26	21	3.20E-03	7.60E-02	8.80E-01	8.6E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Mercury	7439-97-6	D	D	26	1	1.10E-04	1.10E-04	2.00E-03	5.5E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Mercury	7439-97-6	T	D	26	1	8.90E-05	8.90E-05	2.00E-03	4.5E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Nickel	7440-02-0	D	A	26	6	4.10E-03	2.70E-02	7.30E-01	3.7E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	26	7	3.00E-03	2.40E-02	7.30E-01	3.3E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Silver	7440-22-4	T	D	26	1	9.80E-04	9.80E-04	1.80E-01	5.4E-03
ON	Monitoring_Well	Deep_Bedrock	INORG	Zinc	7440-66-6	D	D	26	11	1.05E-02	5.90E-01	1.10E+01	5.4E-02
ON	Monitoring_Well	Deep_Bedrock	INORG	Zinc	7440-66-6	T	D	26	17	1.40E-02	5.30E-01	1.10E+01	4.8E-02
ON	Monitoring_Well	Overburden	VOC	2-Butanone	78-93-3	T	ID	3	1	7.30E-04	7.30E-04	2.20E+01	3.3E-05
ON	Monitoring_Well	Overburden	INORG	Aluminum	7429-90-5	T	D	3	1	2.40E-01	2.40E-01	3.70E+01	6.5E-03
ON	Monitoring_Well	Overburden	INORG	Arsenic	7440-38-2	D	A	3	1	5.20E-03	5.20E-03	5.00E-02	1.0E-01
ON	Monitoring_Well	Overburden	INORG	Arsenic	7440-38-2	T	A	3	1	2.90E-03	2.90E-03	5.00E-02	5.8E-02
ON	Monitoring_Well	Overburden	INORG	Barium	7440-39-3	D	D	3	3	3.40E-02	2.10E-01	2.00E+00	1.1E-01
ON	Monitoring_Well	Overburden	INORG	Barium	7440-39-3	T	D	3	3	2.90E-02	2.10E-01	2.00E+00	1.1E-01
ON	Monitoring_Well	Overburden	INORG	Cadmium	7440-43-9	D	B1	3	1	6.70E-04	6.70E-04	5.00E-03	1.3E-01
ON	Monitoring_Well	Overburden	INORG	Cadmium	7440-43-9	T	B1	3	1	7.00E-04	7.00E-04	5.00E-03	1.4E-01
ON	Monitoring_Well	Overburden	INORG	Chromium (total)	7440-47-3	T		3	1	6.90E-03	6.90E-03	1.00E-01	6.9E-02
ON	Monitoring_Well	Overburden	INORG	Cobalt	7440-48-4	D	B1	3	3	4.00E-03	1.10E-01	7.30E-01	1.5E-01
ON	Monitoring_Well	Overburden	INORG	Cobalt	7440-48-4	T	B1	3	3	3.90E-03	1.80E-01	7.30E-01	2.5E-01
ON	Monitoring_Well	Overburden	INORG	Copper	7440-50-8	D	D	3	1	1.70E-02	1.70E-02	1.30E+00	1.3E-02
ON	Monitoring_Well	Overburden	INORG	Copper	7440-50-8	T	D	3	1	3.50E-02	3.50E-02	1.30E+00	2.7E-02
ON	Monitoring_Well	Overburden	INORG	Iron	7439-89-6	D	D	3	1	3.30E+00	3.30E+00	1.10E+01	3.0E-01
ON	Monitoring_Well	Overburden	INORG	Iron	7439-89-6	T	D	3	2	1.40E-01	3.30E+00	1.10E+01	3.0E-01
ON	Monitoring_Well	Overburden	INORG	Manganese	7439-96-5	D	D	3	3	6.70E-02	2.20E+00	8.80E-01	2.5E+00
ON	Monitoring_Well	Overburden	INORG	Manganese	7439-96-5	T	D	3	3	6.20E-02	2.20E+00	8.80E-01	2.5E+00
ON	Monitoring_Well	Overburden	INORG	Mercury	7439-97-6	D	D	3	1	1.30E-04	1.30E-04	2.00E-03	6.5E-02
ON	Monitoring_Well	Overburden	INORG	Mercury	7439-97-6	T	D	3	1	1.50E-04	1.50E-04	2.00E-03	7.5E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	Monitoring_Well	Overburden	INORG	Nickel	7440-02-0	D	A	3	3	3.20E-03	1.40E-01	7.30E-01	1.9E-01
ON	Monitoring_Well	Overburden	INORG	Nickel	7440-02-0	T	A	3	3	3.30E-03	1.40E-01	7.30E-01	1.9E-01
ON	Monitoring_Well	Overburden	INORG	Zinc	7440-66-6	D	D	3	2	5.40E-02	6.60E-02	1.10E+01	6.0E-03
ON	Monitoring_Well	Overburden	INORG	Zinc	7440-66-6	T	D	3	2	5.20E-02	6.60E-02	1.10E+01	6.0E-03
ON	Monitoring_Well	Shallow_Bedrock	VOC	2-Butanone	78-93-3	T	ID	8	3	1.40E-03	8.00E-02	2.20E+01	3.6E-03
ON	Monitoring_Well	Shallow_Bedrock	VOC	Carbon Disulfide	75-15-0	T		8	1	7.70E-04	7.70E-04	3.70E+00	2.1E-04
ON	Monitoring_Well	Shallow_Bedrock	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	8	1	2.00E-03	2.00E-03	7.00E-02	2.9E-02
ON	Monitoring_Well	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	8	5	3.70E-04	8.40E-03	1.00E+00	8.4E-03
ON	Monitoring_Well	Shallow_Bedrock	VOC	Vinyl Chloride	75-01-4	T	A	8	1	8.40E-03	8.40E-03	2.00E-03	4.2E+00
ON	Monitoring_Well	Shallow_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	8	1	1.60E-03	1.60E-03	2.90E+01	5.5E-05
ON	Monitoring_Well	Shallow_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	8	1	9.00E-04	9.00E-04	3.70E+00	2.4E-04
ON	Monitoring_Well	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	D	B2	11	1	2.43E-04	2.43E-04	5.00E-04	4.9E-01
ON	Monitoring_Well	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	T	B2	11	1	4.73E-04	4.73E-04	5.00E-04	9.5E-01
ON	Monitoring_Well	Shallow_Bedrock	INORG	Arsenic	7440-38-2	D	A	8	3	3.10E-03	1.30E-02	5.00E-02	2.6E-01
ON	Monitoring_Well	Shallow_Bedrock	INORG	Arsenic	7440-38-2	T	A	8	3	3.60E-03	1.00E-02	5.00E-02	2.0E-01
ON	Monitoring_Well	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	8	7	3.00E-02	1.80E-01	2.00E+00	9.0E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	8	7	3.30E-02	1.90E-01	2.00E+00	9.5E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Cadmium	7440-43-9	D	B1	8	1	5.70E-04	5.70E-04	5.00E-03	1.1E-01
ON	Monitoring_Well	Shallow_Bedrock	INORG	Cadmium	7440-43-9	T	B1	8	1	4.00E-04	4.00E-04	5.00E-03	8.0E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	D		8	2	3.60E-03	1.40E-01	1.00E-01	1.4E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	T		8	3	5.40E-03	2.80E-01	1.00E-01	2.8E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Cobalt	7440-48-4	D	B1	8	4	1.20E-03	1.00E-02	7.30E-01	1.4E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Cobalt	7440-48-4	T	B1	8	2	8.70E-03	9.80E-03	7.30E-01	1.3E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	8	6	2.40E-01	1.70E+01	1.10E+01	1.5E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	8	8	2.30E-01	1.33E+01	1.10E+01	1.2E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	8	8	7.70E-03	2.10E+00	8.80E-01	2.4E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	8	8	8.00E-03	2.40E+00	8.80E-01	2.7E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	8	6	3.70E-03	3.00E-02	7.30E-01	4.1E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	8	5	3.10E-03	3.30E-02	7.30E-01	4.5E-02
ON	Monitoring_Well	Shallow_Bedrock	INORG	Thallium	7440-28-0	D		8	1	2.00E-03	2.00E-03	2.00E-03	1.0E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Thallium	7440-28-0	T		8	1	2.20E-03	2.20E-03	2.00E-03	1.1E+00
ON	Monitoring_Well	Shallow_Bedrock	INORG	Vanadium	7440-62-2	D		8	1	9.40E-04	9.40E-04	2.60E-01	3.6E-03
ON	Monitoring_Well	Shallow_Bedrock	INORG	Vanadium	7440-62-2	T		8	1	9.90E-04	9.90E-04	2.60E-01	3.8E-03
ON	Monitoring_Well	Shallow_Bedrock	INORG	Zinc	7440-66-6	D	D	8	2	2.00E-02	2.90E-02	1.10E+01	2.6E-03
ON	Monitoring_Well	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	8	4	1.70E-02	3.20E-02	1.10E+01	2.9E-03
ON	P200(GM)	Overburden	VOC	Acetone	67-64-1	T	ID	1	1	8.28E-04	8.28E-04	3.70E+00	2.2E-04
ON	P200(GM)	Overburden	VOC	Benzene	71-43-2	T	A	1	1	1.75E-04	1.75E-04	5.00E-03	3.5E-02
ON	P200(GM)	Overburden	VOC	Chlorobenzene	108-90-7	T	D	1	1	7.55E-03	7.55E-03	1.00E-01	7.6E-02
ON	P200(GM)	Overburden	VOC	1,2-Dichlorobenzene	95-50-1	T	D	1	1	2.45E-04	2.45E-04	6.00E-01	4.1E-04
ON	P200(GM)	Overburden	VOC	1,3-Dichlorobenzene	541-73-1	T	D	1	1	2.70E-03	2.70E-03	3.30E-02	8.2E-02
ON	P200(GM)	Overburden	VOC	1,4-Dichlorobenzene	106-46-7	T	C	1	1	5.75E-03	5.75E-03	7.50E-02	7.7E-02
ON	P200(GM)	Overburden	VOC	1,1-Dichloroethane	75-34-3	T	C	1	1	7.35E-04	7.35E-04	3.70E+00	2.0E-04

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	P200(GM)	Overburden	VOC	Toluene	108-88-3	T	D	1	1	2.35E-04	2.35E-04	1.00E+00	2.4E-04
ON	P200(GM)	Overburden	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1	1	1.55E-02	1.55E-02	6.00E-03	2.6E+00
ON	P200(GM)	Overburden	SVOC	2,4-Dimethylphenol	105-67-9	T		1	1	1.35E-03	1.35E-03	7.30E-01	1.8E-03
ON	P200(GM)	Overburden	SVOC	Di-n-octylphthalate	117-84-0	T		1	1	1.80E-02	1.80E-02	1.50E+00	1.2E-02
ON	P200(GM)	Overburden	SVOC	Phenol	108-95-2	T	ID	1	1	1.54E-02	1.54E-02	2.20E+01	7.0E-04
ON	P200(GM)	Overburden	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	5.81E+00	5.81E+00	5.00E-04	1.2E+04
ON	P200(GM)	Overburden	INORG	Aluminum	7429-90-5	T	D	1	1	2.20E-02	2.20E-02	3.70E+01	5.9E-04
ON	P200(GM)	Overburden	INORG	Barium	7440-39-3	T	D	1	1	2.10E-01	2.10E-01	2.00E+00	1.1E-01
ON	P200(GM)	Overburden	INORG	Iron	7439-89-6	T	D	1	1	4.95E+00	4.95E+00	1.10E+01	4.5E-01
ON	P200(GM)	Overburden	INORG	Manganese	7439-96-5	T	D	1	1	2.00E+00	2.00E+00	8.80E-01	2.3E+00
ON	P200(GM)	Overburden	INORG	Mercury	7439-97-6	T	D	1	1	1.45E-04	1.45E-04	2.00E-03	7.3E-02
ON	P200(GM)	Overburden	INORG	Thallium	7440-28-0	T		1	1	4.45E-03	4.45E-03	2.00E-03	2.2E+00
ON	P200(GM)	Shallow_Bedrock	VOC	Chlorobenzene	108-90-7	T	D	4	2	3.90E-04	1.70E-03	1.00E-01	1.7E-02
ON	P200(GM)	Shallow_Bedrock	VOC	1,2-Dichlorobenzene	95-50-1	T	D	4	1	1.80E-04	1.80E-04	6.00E-01	3.0E-04
ON	P200(GM)	Shallow_Bedrock	VOC	1,3-Dichlorobenzene	541-73-1	T	D	4	2	1.55E-04	1.00E-03	3.30E-02	3.0E-02
ON	P200(GM)	Shallow_Bedrock	VOC	1,4-Dichlorobenzene	106-46-7	T	C	4	2	4.00E-04	2.20E-03	7.50E-02	2.9E-02
ON	P200(GM)	Shallow_Bedrock	SVOC	Acenaphthene	83-32-9	T		4	1	1.90E-03	1.90E-03	2.20E+00	8.6E-04
ON	P200(GM)	Shallow_Bedrock	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	4	2	4.50E-04	6.70E-04	6.00E-03	1.1E-01
ON	P200(GM)	Shallow_Bedrock	SVOC	Caprolactam	105-60-2	T		4	1	9.20E-02	9.20E-02	1.80E+01	5.1E-03
ON	P200(GM)	Shallow_Bedrock	SVOC	Phenol	108-95-2	T	ID	4	2	9.00E-03	9.75E-03	2.20E+01	4.4E-04
ON	P200(GM)	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	T	B2	7	7	7.86E-04	8.28E-02	5.00E-04	1.7E+02
ON	P200(GM)	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	D	B2	7	1	1.30E-03	1.30E-03	5.00E-04	2.6E+00
ON	P200(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	4	3	6.10E-02	8.70E-02	2.00E+00	4.4E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	4	4	5.10E-02	8.80E-02	2.00E+00	4.4E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	T		4	2	3.80E-03	1.20E-02	1.00E-01	1.2E-01
ON	P200(GM)	Shallow_Bedrock	INORG	Copper	7440-50-8	T	D	4	1	1.50E-02	1.50E-02	1.30E+00	1.2E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	4	2	1.40E-01	1.63E+01	1.10E+01	1.5E+00
ON	P200(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	4	1	1.60E+01	1.60E+01	1.10E+01	1.5E+00
ON	P200(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	4	4	1.40E-02	1.90E-01	8.80E-01	2.2E-01
ON	P200(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	4	4	9.30E-03	2.00E-01	8.80E-01	2.3E-01
ON	P200(GM)	Shallow_Bedrock	INORG	Mercury	7439-97-6	D	D	4	1	9.60E-05	9.60E-05	2.00E-03	4.8E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	4	3	3.10E-03	1.10E-02	7.30E-01	1.5E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	4	2	3.65E-03	9.40E-03	7.30E-01	1.3E-02
ON	P200(GM)	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	4	1	1.08E-02	1.08E-02	1.10E+01	9.8E-04
ON	P205(GM)	Deep_Bedrock	VOC	Acetone	67-64-1	T	ID	4	2	1.20E-03	2.50E-03	3.70E+00	6.8E-04
ON	P205(GM)	Deep_Bedrock	VOC	Chloroform	67-66-3	T	B2	4	1	1.00E-03	1.00E-03	1.00E-01	1.0E-02
ON	P205(GM)	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	4	2	1.20E-03	2.70E-03	1.00E+00	2.7E-03
ON	P205(GM)	Deep_Bedrock	SVOC	Caprolactam	105-60-2	T		4	1	1.80E-02	1.80E-02	1.80E+01	1.0E-03
ON	P205(GM)	Deep_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	4	2	2.00E-03	3.10E-02	2.90E+01	1.1E-03
ON	P205(GM)	Deep_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	4	1	3.10E-03	3.10E-03	3.70E+00	8.4E-04
ON	P205(GM)	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	4	4	5.20E-02	5.70E-02	2.00E+00	2.9E-02
ON	P205(GM)	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	4	4	5.20E-02	5.80E-02	2.00E+00	2.9E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	P205(GM)	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	D		4	1	7.50E-03	7.50E-03	1.00E-01	7.5E-02
ON	P205(GM)	Deep_Bedrock	INORG	Cobalt	7440-48-4	T	B1	4	1	2.00E-03	2.00E-03	7.30E-01	2.7E-03
ON	P205(GM)	Deep_Bedrock	INORG	Cobalt	7440-48-4	D	B1	4	1	2.20E-03	2.20E-03	7.30E-01	3.0E-03
ON	P205(GM)	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	4	4	5.60E-02	2.30E-01	1.10E+01	2.1E-02
ON	P205(GM)	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	4	2	9.50E-02	1.30E-01	1.10E+01	1.2E-02
ON	P205(GM)	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	4	2	3.80E-03	6.00E-02	8.80E-01	6.8E-02
ON	P205(GM)	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	4	2	4.10E-03	5.90E-02	8.80E-01	6.7E-02
ON	P205(GM)	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	4	1	2.40E-02	2.40E-02	7.30E-01	3.3E-02
ON	P205(GM)	Deep_Bedrock	INORG	Nickel	7440-02-0	D	A	4	1	2.70E-02	2.70E-02	7.30E-01	3.7E-02
ON	P205(GM)	Deep_Bedrock	INORG	Zinc	7440-66-6	T	D	4	2	2.70E-02	5.30E-01	1.10E+01	4.8E-02
ON	P205(GM)	Deep_Bedrock	INORG	Zinc	7440-66-6	D	D	4	1	5.20E-01	5.20E-01	1.10E+01	4.7E-02
ON	P205(GM)	Shallow_Bedrock	VOC	2-Butanone	78-93-3	T	ID	1	1	8.00E-02	8.00E-02	2.20E+01	3.6E-03
ON	P205(GM)	Shallow_Bedrock	VOC	Carbon Disulfide	75-15-0	T		1	1	7.70E-04	7.70E-04	3.70E+00	2.1E-04
ON	P205(GM)	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	1	1	1.10E-03	1.10E-03	1.00E+00	1.1E-03
ON	P205(GM)	Shallow_Bedrock	INORG	Arsenic	7440-38-2	T	A	1	1	3.80E-03	3.80E-03	5.00E-02	7.6E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Arsenic	7440-38-2	D	A	1	1	3.10E-03	3.10E-03	5.00E-02	6.2E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	7.20E-02	7.20E-02	2.00E+00	3.6E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	6.90E-02	6.90E-02	2.00E+00	3.5E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	T		1	1	2.80E-01	2.80E-01	1.00E-01	2.8E+00
ON	P205(GM)	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	D		1	1	1.40E-01	1.40E-01	1.00E-01	1.4E+00
ON	P205(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	2.80E-01	2.80E-01	1.10E+01	2.5E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	2.60E-01	2.60E-01	1.10E+01	2.4E-02
ON	P205(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	8.00E-03	8.00E-03	8.80E-01	9.1E-03
ON	P205(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	7.70E-03	7.70E-03	8.80E-01	8.8E-03
ON	P216(GM)	Deep_Bedrock	VOC	Acetone	67-64-1	T	ID	2	1	2.20E-02	2.20E-02	3.70E+00	5.9E-03
ON	P216(GM)	Deep_Bedrock	VOC	Chloroform	67-66-3	T	B2	2	1	1.50E-03	1.50E-03	1.00E-01	1.5E-02
ON	P216(GM)	Deep_Bedrock	VOC	2-Hexanone	591-78-6	T		2	1	6.70E-04	6.70E-04		
ON	P216(GM)	Deep_Bedrock	VOC	Methylene Chloride	75-09-2	T	B2	2	1	4.10E-04	4.10E-04	5.00E-03	8.2E-02
ON	P216(GM)	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	2	1	7.80E-04	7.80E-04	1.00E+00	7.8E-04
ON	P216(GM)	Deep_Bedrock	VOC	Xylenes (total)	1330-20-7	T	ID	2	1	1.40E-03	1.40E-03	1.00E+01	1.4E-04
ON	P216(GM)	Deep_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	2	1	1.60E-02	1.60E-02	2.90E+01	5.5E-04
ON	P216(GM)	Deep_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	2	1	4.90E-04	4.90E-04	3.70E+00	1.3E-04
ON	P216(GM)	Deep_Bedrock	INORG	Antimony	7440-36-0	D		2	1	4.00E-03	4.00E-03	6.00E-03	6.7E-01
ON	P216(GM)	Deep_Bedrock	INORG	Arsenic	7440-38-2	T	A	2	1	7.20E-03	7.20E-03	5.00E-02	1.4E-01
ON	P216(GM)	Deep_Bedrock	INORG	Arsenic	7440-38-2	D	A	2	1	6.00E-03	6.00E-03	5.00E-02	1.2E-01
ON	P216(GM)	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	2	2	9.00E-02	9.80E-02	2.00E+00	4.9E-02
ON	P216(GM)	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	2	2	8.90E-02	8.90E-02	2.00E+00	4.5E-02
ON	P216(GM)	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	T		2	1	1.30E+00	1.30E+00	1.00E-01	1.3E+01
ON	P216(GM)	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	D		2	1	1.10E+00	1.10E+00	1.00E-01	1.1E+01
ON	P216(GM)	Deep_Bedrock	INORG	Copper	7440-50-8	T	D	2	1	3.70E-02	3.70E-02	1.30E+00	2.8E-02
ON	P216(GM)	Deep_Bedrock	INORG	Copper	7440-50-8	D	D	2	1	1.50E-02	1.50E-02	1.30E+00	1.2E-02
ON	P216(GM)	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	2	1	9.40E-01	9.40E-01	1.10E+01	8.5E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	P216(GM)	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	2	1	7.70E-01	7.70E-01	1.10E+01	7.0E-02
ON	P216(GM)	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	2	2	1.70E-02	3.80E-02	8.80E-01	4.3E-02
ON	P216(GM)	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	2	2	1.80E-02	3.10E-02	8.80E-01	3.5E-02
ON	P216(GM)	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	2	2	2.50E-03	2.20E-02	7.30E-01	3.0E-02
ON	P216(GM)	Deep_Bedrock	INORG	Nickel	7440-02-0	D	A	2	2	3.00E-03	1.80E-02	7.30E-01	2.5E-02
ON	P216(GM)	Deep_Bedrock	INORG	Selenium	7782-49-2	T	D	2	1	1.30E-02	1.30E-02	5.00E-02	2.6E-01
ON	P216(GM)	Deep_Bedrock	INORG	Selenium	7782-49-2	D	D	2	1	9.80E-03	9.80E-03	5.00E-02	2.0E-01
ON	P216(GM)	Deep_Bedrock	INORG	Zinc	7440-66-6	T	D	2	1	4.00E-01	4.00E-01	1.10E+01	3.6E-02
ON	P216(GM)	Deep_Bedrock	INORG	Zinc	7440-66-6	D	D	2	1	2.90E-01	2.90E-01	1.10E+01	2.6E-02
ON	Plant_Boundary	Deep_Bedrock	VOC	Methyl Acetate	79-20-9	T		1	1	1.40E-03	1.40E-03	3.70E+01	3.8E-05
ON	Plant_Boundary	Deep_Bedrock	VOC	Toluene	108-88-3	T	D	1	1	1.60E-02	1.60E-02	1.00E+00	1.6E-02
ON	Plant_Boundary	Deep_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	1	1	1.40E-03	1.40E-03	2.90E+01	4.8E-05
ON	Plant_Boundary	Deep_Bedrock	SVOC	Methylphenol (total)	1319-77-3	T		1	1	1.60E-03	1.60E-03	1.80E-01	8.9E-03
ON	Plant_Boundary	Deep_Bedrock	SVOC	Phenol	108-95-2	T	ID	1	1	2.60E-03	2.60E-03	2.20E+01	1.2E-04
ON	Plant_Boundary	Deep_Bedrock	INORG	Arsenic	7440-38-2	T	A	1	1	2.90E-03	2.90E-03	5.00E-02	5.8E-02
ON	Plant_Boundary	Deep_Bedrock	INORG	Arsenic	7440-38-2	D	A	1	1	3.00E-03	3.00E-03	5.00E-02	6.0E-02
ON	Plant_Boundary	Deep_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	4.00E-01	4.00E-01	2.00E+00	2.0E-01
ON	Plant_Boundary	Deep_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	3.70E-01	3.70E-01	2.00E+00	1.9E-01
ON	Plant_Boundary	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	T		1	1	5.90E-02	5.90E-02	1.00E-01	5.9E-01
ON	Plant_Boundary	Deep_Bedrock	INORG	Chromium (total)	7440-47-3	D		1	1	1.30E-01	1.30E-01	1.00E-01	1.3E+00
ON	Plant_Boundary	Deep_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	4.80E+00	4.80E+00	1.10E+01	4.4E-01
ON	Plant_Boundary	Deep_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	4.10E+00	4.10E+00	1.10E+01	3.7E-01
ON	Plant_Boundary	Deep_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	2.80E-02	2.80E-02	8.80E-01	3.2E-02
ON	Plant_Boundary	Deep_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	2.50E-02	2.50E-02	8.80E-01	2.8E-02
ON	Plant_Boundary	Deep_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	1.60E-02	1.60E-02	7.30E-01	2.2E-02
ON	Plant_Boundary	Deep_Bedrock	INORG	Nickel	7440-02-0	D	A	1	1	1.40E-02	1.40E-02	7.30E-01	1.9E-02
ON	Plant_Boundary	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	3	2	3.10E-03	8.60E-03	1.00E+00	8.6E-03
ON	Plant_Boundary	Shallow_Bedrock	SVOC	Diethylphthalate	84-66-2	T	D	3	1	8.90E-04	8.90E-04	2.90E+01	3.1E-05
ON	Plant_Boundary	Shallow_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	T	D	3	1	7.60E-04	7.60E-04	3.70E+00	2.1E-04
ON	Plant_Boundary	Shallow_Bedrock	INORG	Arsenic	7440-38-2	T	A	3	2	2.30E-03	1.00E-02	5.00E-02	2.0E-01
ON	Plant_Boundary	Shallow_Bedrock	INORG	Arsenic	7440-38-2	D	A	3	1	1.30E-02	1.30E-02	5.00E-02	2.6E-01
ON	Plant_Boundary	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	3	3	3.30E-02	7.30E-02	2.00E+00	3.7E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	3	3	3.00E-02	7.00E-02	2.00E+00	3.5E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3	T		3	1	5.40E-03	5.40E-03	1.00E-01	5.4E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Cobalt	7440-48-4	T	B1	3	1	8.70E-03	8.70E-03	7.30E-01	1.2E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Cobalt	7440-48-4	D	B1	3	1	8.30E-03	8.30E-03	7.30E-01	1.1E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	3	3	8.70E-02	7.00E+00	1.10E+01	6.4E-01
ON	Plant_Boundary	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	3	3	8.90E-02	6.10E+00	1.10E+01	5.5E-01
ON	Plant_Boundary	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	3	2	7.90E-03	2.40E+00	8.80E-01	2.7E+00
ON	Plant_Boundary	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	3	2	8.50E-03	2.10E+00	8.80E-01	2.4E+00
ON	Plant_Boundary	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	3	1	3.30E-02	3.30E-02	7.30E-01	4.5E-02
ON	Plant_Boundary	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	3	1	3.00E-02	3.00E-02	7.30E-01	4.1E-02

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	Plant_Boundary	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	3	2	3.20E-02	3.70E-02	1.10E+01	3.4E-03
ON	Plant_Boundary	Shallow_Bedrock	INORG	Zinc	7440-66-6	D	D	3	1	2.00E-02	2.00E-02	1.10E+01	1.8E-03
OFF	P002	Shallow_Bedrock	VOC	Chloroform	67-66-3	T	B2	1	1	2.10E-04	2.10E-04	1.00E-01	2.1E-03
OFF	P002	Shallow_Bedrock	SVOC	Caprolactam	105-60-2	T		1	1	2.60E-01	2.60E-01	1.80E+01	1.4E-02
OFF	P002	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	4.70E-02	4.70E-02	2.00E+00	2.4E-02
OFF	P002	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	4.80E-02	4.80E-02	2.00E+00	2.4E-02
OFF	P002	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	4.60E-01	4.60E-01	1.10E+01	4.2E-02
OFF	P002	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	2.40E-02	2.40E-02	8.80E-01	2.7E-02
OFF	P002	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	2.50E-02	2.50E-02	8.80E-01	2.8E-02
OFF	P002	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	5.70E-03	5.70E-03	7.30E-01	7.8E-03
OFF	P002	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	1	1	6.60E-03	6.60E-03	7.30E-01	9.0E-03
OFF	P013	Shallow_Bedrock	VOC	Toluene	108-88-3	T	D	1	1	1.80E-04	1.80E-04	1.00E+00	1.8E-04
OFF	P013	Shallow_Bedrock	SVOC	Caprolactam	105-60-2	T		1	1	3.50E-01	3.50E-01	1.80E+01	1.9E-02
OFF	P013	Shallow_Bedrock	INORG	Arsenic	7440-38-2	T	A	1	1	2.70E-03	2.70E-03	5.00E-02	5.4E-02
OFF	P013	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	1.30E-01	1.30E-01	2.00E+00	6.5E-02
OFF	P013	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	1.40E-01	1.40E-01	2.00E+00	7.0E-02
OFF	P013	Shallow_Bedrock	INORG	Cyanide (amenable)	57-12-5A	T		1	1	3.10E-02	3.10E-02	7.30E-01	4.2E-02
OFF	P013	Shallow_Bedrock	INORG	Cyanide (total)	57-12-5	T	D	1	1	4.40E-02	4.40E-02	2.00E-01	2.2E-01
OFF	P013	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	1.90E+00	1.90E+00	1.10E+01	1.7E-01
OFF	P013	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	1.40E+00	1.40E+00	1.10E+01	1.3E-01
OFF	P013	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	3.80E-02	3.80E-02	8.80E-01	4.3E-02
OFF	P013	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	5.10E-02	5.10E-02	8.80E-01	5.8E-02
OFF	P213(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	7.50E-02	7.50E-02	2.00E+00	3.8E-02
OFF	P213(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	7.70E-02	7.70E-02	2.00E+00	3.9E-02
OFF	P213(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	T	D	1	1	1.60E-01	1.60E-01	1.10E+01	1.5E-02
OFF	P213(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	D	D	1	1	1.10E-01	1.10E-01	1.10E+01	1.0E-02
OFF	P213(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	4.60E-03	4.60E-03	8.80E-01	5.2E-03
OFF	P213(GM)	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	2.80E-03	2.80E-03	7.30E-01	3.8E-03
OFF	P385	Shallow_Bedrock	VOC	Chloroform	67-66-3	T	B2	1	1	1.20E-04	1.20E-04	1.00E-01	1.2E-03
OFF	P385	Shallow_Bedrock	VOC	Chloromethane	74-87-3	T	D	1	1	1.70E-04	1.70E-04	5.20E-02	3.3E-03
OFF	P385	Shallow_Bedrock	INORG	Arsenic	7440-38-2	D	A	1	1	2.05E-03	2.05E-03	5.00E-02	4.1E-02
OFF	P385	Shallow_Bedrock	INORG	Barium	7440-39-3	T	D	1	1	2.95E-02	2.95E-02	2.00E+00	1.5E-02
OFF	P385	Shallow_Bedrock	INORG	Barium	7440-39-3	D	D	1	1	3.05E-02	3.05E-02	2.00E+00	1.5E-02
OFF	P385	Shallow_Bedrock	INORG	Manganese	7439-96-5	T	D	1	1	6.80E-03	6.80E-03	8.80E-01	7.7E-03
OFF	P385	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	D	1	1	6.35E-03	6.35E-03	8.80E-01	7.2E-03
OFF	P385	Shallow_Bedrock	INORG	Nickel	7440-02-0	T	A	1	1	1.50E-02	1.50E-02	7.30E-01	2.1E-02
OFF	P385	Shallow_Bedrock	INORG	Nickel	7440-02-0	D	A	1	1	1.60E-02	1.60E-02	7.30E-01	2.2E-02
OFF	P385	Shallow_Bedrock	INORG	Silver	7440-22-4	T	D	1	1	5.65E-04	5.65E-04	1.80E-01	3.1E-03
OFF	P385	Shallow_Bedrock	INORG	Silver	7440-22-4	D	D	1	1	8.35E-04	8.35E-04	1.80E-01	4.6E-03

**Table 2-2: Groundwater Screening Results
Bedford, Indiana**

On/Off-Site	Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P385	Shallow_Bedrock	INORG	Zinc	7440-66-6	T	D	1	1	2.50E-02	2.50E-02	1.10E+01	2.3E-03
OFF	P385	Shallow_Bedrock	INORG	Zinc	7440-66-6	D	D	1	1	2.50E-02	2.50E-02	1.10E+01	2.3E-03
Notes:													
Only constituents detected at each area are shown.													
Shaded cells represent ratios of conc to screening criteria greater than 1.													
The Screening Criteria hierarchy is State MCL, Fed MCL, the lower of the integrated Screening Criteria at:													
				target cancer risk =	1E-05								
				target hazard quotient =	1								
The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.													
The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).													
The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Criteria for 4-Methylphenol.													
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).													
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.													
Chem Group - Chemical Group													
Meas Basis - Measured Basis; T = Total, D = Dissolved													
Carc Class - EPA Weight-of-Evidence Cancer Classification													
Monitoring_Well includes data from wells MW-X033Y147D-1, MW-X033Y147D-2, MW-X033Y147D-3, MW-X033Y147D-4, MW-X045Y258D-2, MW-X178Y367D-2, MW-X178Y367D-3, MW-X234Y157D-1, MW-X234Y157D-2, MW-X234Y157D-3, MW-X234Y157D-4, MW-X234Y157S, MW-X269Y201D-1, MW-X269Y201D-2, MW-X269Y201D-3, and MW-X033Y147S and wells that are located within A001, A015, A021, and Plant_Boundary.													

**Table 2-3a: On-Site Sediment Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Back-ground (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A004	VOC	1,3-Dichlorobenzene	541-73-1	D	1	1	3.10E-03	3.10E-03		6.30E+01 NC	4.9E-05
A004	VOC	1,4-Dichlorobenzene	106-46-7	C	1	1	5.50E-03	5.50E-03		7.90E+01 C	7.0E-05
A004	VOC	Methyl Acetate	79-20-9		1	1	4.10E-02	4.10E-02		9.20E+04 NC	4.5E-07
A004	P/PCB	PCBs (total)	1336-36-3	B2	1	1	2.17E+01	2.17E+01		7.40E+00 C	2.9E+00
A004	INORG	Aluminum	7429-90-5	D	1	1	4.97E+03	4.97E+03	3.32E+04	9.20E+05 NC	5.4E-03
A004	INORG	Arsenic	7440-38-2	A	1	1	1.16E+01	1.16E+01	2.12E+01	1.60E+01 C	7.3E-01
A004	INORG	Barium	7440-39-3	D	1	1	1.12E+02	1.12E+02	2.50E+02	6.70E+04 NC	1.7E-03
A004	INORG	Chromium (total)	7440-47-3		1	1	1.57E+01	1.57E+01	9.80E+01	2.50E+03 NC	6.3E-03
A004	INORG	Cobalt	7440-48-4	B1	1	1	2.66E+01	2.66E+01		1.30E+04 NC	2.0E-03
A004	INORG	Copper	7440-50-8	D	1	1	9.31E+01	9.31E+01	6.20E+01	4.10E+04 NC	2.3E-03
A004	INORG	Iron	7439-89-6	D	1	1	3.96E+04	3.96E+04	4.90E+04	3.10E+05 NC	1.3E-01
A004	INORG	Lead	7439-92-1	B2	1	1	1.63E+01	1.63E+01	1.16E+02	7.50E+02 NC	2.2E-02
A004	INORG	Manganese	7439-96-5	D	1	1	6.84E+03	6.84E+03	1.64E+03	1.90E+04 NC	3.6E-01
A004	INORG	Nickel	7440-02-0	A	1	1	3.08E+01	3.08E+01	7.00E+01	2.00E+04 NC	1.5E-03
A004	INORG	Silver	7440-22-4	D	1	1	1.00E+00	1.00E+00		5.10E+03 NC	2.0E-04
A004	INORG	Vanadium	7440-62-2		1	1	9.00E+00	9.00E+00	5.80E+01	7.20E+03 NC	1.3E-03
A004	INORG	Zinc	7440-66-6	D	1	1	6.80E+01	6.80E+01	3.30E+02	3.10E+05 NC	2.2E-04
A004a	VOC	Methyl Acetate	79-20-9		1	1	5.80E-03	5.80E-03		9.20E+04 NC	6.3E-08
A004a	P/PCB	PCBs (total)	1336-36-3	B2	1	1	2.84E+00	2.84E+00		7.40E+00 C	3.8E-01
A004a	INORG	Aluminum	7429-90-5	D	1	1	7.47E+02	7.47E+02	3.32E+04	9.20E+05 NC	8.1E-04
A004a	INORG	Arsenic	7440-38-2	A	1	1	1.70E+00	1.70E+00	2.12E+01	1.60E+01 C	1.1E-01
A004a	INORG	Barium	7440-39-3	D	1	1	8.30E+00	8.30E+00	2.50E+02	6.70E+04 NC	1.2E-04
A004a	INORG	Cadmium	7440-43-9	B1	1	1	1.50E+00	1.50E+00		4.50E+02 NC	3.3E-03
A004a	INORG	Chromium (total)	7440-47-3		1	1	3.40E+00	3.40E+00	9.80E+01	2.50E+03 NC	1.4E-03
A004a	INORG	Cobalt	7440-48-4	B1	1	1	1.40E+00	1.40E+00		1.30E+04 NC	1.1E-04
A004a	INORG	Copper	7440-50-8	D	1	1	6.30E+00	6.30E+00	6.20E+01	4.10E+04 NC	1.5E-04
A004a	INORG	Iron	7439-89-6	D	1	1	4.76E+03	4.76E+03	4.90E+04	3.10E+05 NC	1.5E-02
A004a	INORG	Lead	7439-92-1	B2	1	1	2.14E+01	2.14E+01	1.16E+02	7.50E+02 NC	2.9E-02
A004a	INORG	Manganese	7439-96-5	D	1	1	1.67E+02	1.67E+02	1.64E+03	1.90E+04 NC	8.8E-03
A004a	INORG	Nickel	7440-02-0	A	1	1	3.80E+00	3.80E+00	7.00E+01	2.00E+04 NC	1.9E-04
A004a	INORG	Silver	7440-22-4	D	1	1	4.10E-01	4.10E-01		5.10E+03 NC	8.0E-05
A004a	INORG	Vanadium	7440-62-2		1	1	2.60E+00	2.60E+00	5.80E+01	7.20E+03 NC	3.6E-04
A004a	INORG	Zinc	7440-66-6	D	1	1	1.51E+02	1.51E+02	3.30E+02	3.10E+05 NC	4.9E-04
A010	VOC	Benzene	71-43-2	A	3	2	1.60E-02	2.00E-02		1.30E+01 C	1.5E-03
A010	VOC	2-Butanone	78-93-3	ID	3	2	1.30E-02	1.30E-02		2.70E+04 NC	4.8E-07
A010	VOC	Carbon Disulfide	75-15-0		3	1	3.10E-03	3.10E-03		1.20E+03 NC	2.6E-06
A010	VOC	Cumene	98-82-8	D	3	2	1.10E-02	1.30E-02		2.00E+03 NC	6.5E-06
A010	VOC	Dichlorodifluoromethane	75-71-8		3	1	4.10E-03	4.10E-03		3.10E+02 NC	1.3E-05

**Table 2-3a: On-Site Sediment Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Back-ground (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
A010	VOC	Methyl Acetate	79-20-9		3	3	1.10E-02	3.55E-02		9.20E+04 NC	3.9E-07
A010	VOC	Toluene	108-88-3	D	3	2	2.90E-03	3.20E-03		2.20E+03 NC	1.5E-06
A010	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	2.00E-01	3.30E-01		2.10E+01 C	1.6E-02
A010	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	2.80E-01	4.30E-01		2.10E+00 C	2.0E-01
A010	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	3.60E-01	6.30E-01		2.10E+01 C	3.0E-02
A010	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.90E-01	2.70E-01		2.90E+04 NC	9.3E-06
A010	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	1.60E-01	2.60E-01		2.10E+02 C	1.2E-03
A010	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	2	3.10E-01	3.70E-01		1.20E+03 C	3.1E-04
A010	SVOC	Chrysene	218-01-9	B2	3	2	2.80E-01	4.50E-01		2.10E+03 C	2.1E-04
A010	SVOC	Fluoranthene	206-44-0	D	3	2	4.40E-01	8.10E-01		2.20E+04 NC	3.7E-05
A010	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	1.40E-01	2.40E-01		2.10E+01 C	1.1E-02
A010	SVOC	Phenanthrene	85-01-8	D	3	2	2.60E-01	4.60E-01		2.90E+04 NC	1.6E-05
A010	SVOC	Pyrene	129-00-0	D	3	2	4.70E-01	7.60E-01		2.90E+04 NC	2.6E-05
A010	P/PCB	PCBs (total)	1336-36-3	B2	3	3	7.12E+00	2.83E+01		7.40E+00 C	3.8E+00
A010	INORG	Aluminum	7429-90-5	D	3	3	1.23E+04	2.91E+04	3.32E+04	9.20E+05 NC	3.2E-02
A010	INORG	Antimony	7440-36-0		3	2	8.00E-01	1.20E+00		4.10E+02 NC	2.9E-03
A010	INORG	Arsenic	7440-38-2	A	3	3	3.80E+00	2.22E+01	2.12E+01	1.60E+01 C	1.4E+00
A010	INORG	Barium	7440-39-3	D	3	3	4.59E+01	1.80E+02	2.50E+02	6.70E+04 NC	2.7E-03
A010	INORG	Beryllium	7440-41-7	B1	3	2	2.90E-01	3.30E-01		1.90E+03 NC	1.7E-04
A010	INORG	Cadmium	7440-43-9	B1	3	2	1.10E+00	1.90E+00		4.50E+02 NC	4.2E-03
A010	INORG	Chromium (total)	7440-47-3		3	3	1.55E+01	3.74E+01	9.80E+01	2.50E+03 NC	1.5E-02
A010	INORG	Cobalt	7440-48-4	B1	3	3	6.20E+00	3.62E+01		1.30E+04 NC	2.8E-03
A010	INORG	Copper	7440-50-8	D	3	3	5.21E+01	8.86E+02	6.20E+01	4.10E+04 NC	2.2E-02
A010	INORG	Cyanide (amenable)	57-12-5A		3	1	3.65E+00	3.65E+00		1.20E+04 NC	3.0E-04
A010	INORG	Cyanide (total)	57-12-5	D	3	2	4.90E-01	4.05E+00		1.20E+04 NC	3.4E-04
A010	INORG	Iron	7439-89-6	D	3	3	9.60E+03	4.66E+04	4.90E+04	3.10E+05 NC	1.5E-01
A010	INORG	Lead	7439-92-1	B2	3	3	2.26E+01	9.10E+01	1.16E+02	7.50E+02 NC	1.2E-01
A010	INORG	Manganese	7439-96-5	D	3	3	1.15E+02	1.31E+04	1.64E+03	1.90E+04 NC	6.9E-01
A010	INORG	Mercury	7439-97-6	D	3	2	1.10E+01	3.60E-01	2.28E-01	1.36E+01 NC	2.6E-02
A010	INORG	Nickel	7440-02-0	A	3	3	2.42E+01	5.96E+01	7.00E+01	2.00E+04 NC	3.0E-03
A010	INORG	Selenium	7782-49-2	D	3	2	4.50E-01	7.10E-01		5.10E+03 NC	1.4E-04
A010	INORG	Silver	7440-22-4	D	3	2	1.90E+00	3.90E+00		5.10E+03 NC	7.6E-04
A010	INORG	Thallium	7440-28-0		3	2	9.50E-01	1.70E+00		6.80E+01 NC	2.5E-02
A010	INORG	Vanadium	7440-62-2		3	3	1.21E+01	6.28E+01	5.80E+01	7.20E+03 NC	8.7E-03
A010	INORG	Zinc	7440-66-6	D	3	3	9.67E+01	9.08E+02	3.30E+02	3.10E+05 NC	2.9E-03
P215(GM)	VOC	Acetone	67-64-1	ID	4	3	5.10E-03	1.00E-01		6.00E+03 NC	1.7E-05
P215(GM)	VOC	2-Butanone	78-93-3	ID	4	1	1.90E-02	1.90E-02		2.70E+04 NC	7.0E-07
P215(GM)	VOC	Chlorobenzene	108-90-7	D	4	1	8.70E-03	8.70E-03		5.30E+02 NC	1.6E-05

**Table 2-3a: On-Site Sediment Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Back-ground (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
P215(GM)	VOC	1,3-Dichlorobenzene	541-73-1	D	4	1	2.80E-02	2.80E-02		6.30E+01 NC	4.4E-04
P215(GM)	VOC	1,4-Dichlorobenzene	106-46-7	C	4	1	5.40E-02	5.40E-02		7.90E+01 C	6.8E-04
P215(GM)	VOC	Methyl Acetate	79-20-9		4	4	5.80E-03	5.20E-02		9.20E+04 NC	5.7E-07
P215(GM)	P/PCB	PCBs (total)	1336-36-3	B2	4	4	2.65E+00	1.82E+01		7.40E+00 C	2.5E+00
P215(GM)	INORG	Aluminum	7429-90-5	D	4	4	7.47E+02	7.90E+03	3.32E+04	9.20E+05 NC	8.6E-03
P215(GM)	INORG	Arsenic	7440-38-2	A	4	4	1.70E+00	1.20E+02	2.12E+01	1.60E+01 C	7.5E+00
P215(GM)	INORG	Barium	7440-39-3	D	4	4	8.30E+00	4.93E+02	2.50E+02	6.70E+04 NC	7.4E-03
P215(GM)	INORG	Beryllium	7440-41-7	B1	4	3	4.50E-01	5.20E-01		1.90E+03 NC	2.7E-04
P215(GM)	INORG	Cadmium	7440-43-9	B1	4	4	6.80E-01	1.70E+00		4.50E+02 NC	3.8E-03
P215(GM)	INORG	Chromium (total)	7440-47-3		4	4	3.40E+00	1.66E+01	9.80E+01	2.50E+03 NC	6.6E-03
P215(GM)	INORG	Cobalt	7440-48-4	B1	4	4	1.40E+00	2.97E+01		1.30E+04 NC	2.3E-03
P215(GM)	INORG	Copper	7440-50-8	D	4	4	6.30E+00	1.36E+02	6.20E+01	4.10E+04 NC	3.3E-03
P215(GM)	INORG	Cyanide (total)	57-12-5	D	4	1	1.10E+00	1.10E+00		1.20E+04 NC	9.2E-05
P215(GM)	INORG	Iron	7439-89-6	D	4	4	4.76E+03	3.64E+05	4.90E+04	3.10E+05 NC	1.2E+00
P215(GM)	INORG	Lead	7439-92-1	B2	4	4	1.81E+01	2.20E+01	1.16E+02	7.50E+02 NC	2.9E-02
P215(GM)	INORG	Manganese	7439-96-5	D	4	4	1.67E+02	1.62E+04	1.64E+03	1.90E+04 NC	8.5E-01
P215(GM)	INORG	Mercury	7439-97-6	D	4	3	1.10E-01	2.00E-01	2.28E-01	1.36E+01 NC	1.5E-02
P215(GM)	INORG	Nickel	7440-02-0	A	4	4	3.80E+00	1.90E+01	7.00E+01	2.00E+04 NC	9.5E-04
P215(GM)	INORG	Selenium	7782-49-2	D	4	2	3.85E-01	8.70E+00		5.10E+03 NC	1.7E-03
P215(GM)	INORG	Silver	7440-22-4	D	4	3	4.10E-01	1.50E+00		5.10E+03 NC	2.9E-04
P215(GM)	INORG	Thallium	7440-28-0		4	2	6.48E-01	1.25E+01		6.80E+01 NC	1.8E-01
P215(GM)	INORG	Vanadium	7440-62-2		4	4	2.60E+00	2.28E+01	5.80E+01	7.20E+03 NC	3.2E-03
P215(GM)	INORG	Zinc	7440-66-6	D	4	4	8.18E+01	1.55E+02	3.30E+02	3.10E+05 NC	5.0E-04
P216(GM)	VOC	Acetone	67-64-1	ID	4	4	5.10E-03	1.00E-01		6.00E+03 NC	1.7E-05
P216(GM)	VOC	2-Butanone	78-93-3	ID	4	1	1.90E-02	1.90E-02		2.70E+04 NC	7.0E-07
P216(GM)	VOC	Chlorobenzene	108-90-7	D	4	1	8.70E-03	8.70E-03		5.30E+02 NC	1.6E-05
P216(GM)	VOC	1,3-Dichlorobenzene	541-73-1	D	4	1	2.80E-02	2.80E-02		6.30E+01 NC	4.4E-04
P216(GM)	VOC	1,4-Dichlorobenzene	106-46-7	C	4	1	5.40E-02	5.40E-02		7.90E+01 C	6.8E-04
P216(GM)	VOC	Methyl Acetate	79-20-9		4	4	1.10E-02	5.20E-02		9.20E+04 NC	5.7E-07
P216(GM)	P/PCB	PCBs (total)	1336-36-3	B2	5	5	3.66E-01	1.82E+01		7.40E+00 C	2.5E+00
P216(GM)	INORG	Aluminum	7429-90-5	D	4	4	4.49E+03	1.02E+04	3.32E+04	9.20E+05 NC	1.1E-02
P216(GM)	INORG	Arsenic	7440-38-2	A	4	4	6.20E+00	1.20E+02	2.12E+01	1.60E+01 C	7.5E+00
P216(GM)	INORG	Barium	7440-39-3	D	4	4	4.65E+01	4.93E+02	2.50E+02	6.70E+04 NC	7.4E-03
P216(GM)	INORG	Beryllium	7440-41-7	B1	4	4	3.30E-01	5.20E-01		1.90E+03 NC	2.7E-04
P216(GM)	INORG	Cadmium	7440-43-9	B1	4	4	6.80E-01	1.70E+00		4.50E+02 NC	3.8E-03
P216(GM)	INORG	Chromium (total)	7440-47-3		4	4	5.50E+00	2.19E+01	9.80E+01	2.50E+03 NC	8.8E-03
P216(GM)	INORG	Cobalt	7440-48-4	B1	4	4	1.04E+01	2.97E+01		1.30E+04 NC	2.3E-03
P216(GM)	INORG	Copper	7440-50-8	D	4	4	1.95E+01	1.36E+02	6.20E+01	4.10E+04 NC	3.3E-03

**Table 2-3a: On-Site Sediment Screening Results
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Back-ground (mg/kg)	Industrial Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Industrial Screening Criteria
P216(GM)	INORG	Cyanide (total)	57-12-5	D	4	1	1.10E+00	1.10E+00		1.20E+04 NC	9.2E-05
P216(GM)	INORG	Iron	7439-89-6	D	4	4	1.43E+04	3.64E+05	4.90E+04	3.10E+05 NC	1.2E+00
P216(GM)	INORG	Lead	7439-92-1	B2	4	4	1.81E+01	2.20E+01	1.16E+02	7.50E+02 NC	2.9E-02
P216(GM)	INORG	Manganese	7439-96-5	D	4	4	8.93E+02	1.62E+04	1.64E+03	1.90E+04 NC	8.5E-01
P216(GM)	INORG	Mercury	7439-97-6	D	4	4	1.10E-01	8.90E-01	2.28E-01	1.36E+01 NC	6.5E-02
P216(GM)	INORG	Nickel	7440-02-0	A	4	4	1.21E+01	2.79E+01	7.00E+01	2.00E+04 NC	1.4E-03
P216(GM)	INORG	Selenium	7782-49-2	D	4	2	3.85E-01	8.70E+00		5.10E+03 NC	1.7E-03
P216(GM)	INORG	Silver	7440-22-4	D	4	3	1.10E+00	1.50E+00		5.10E+03 NC	2.9E-04
P216(GM)	INORG	Thallium	7440-28-0		4	2	6.48E-01	1.25E+01		6.80E+01 NC	1.8E-01
P216(GM)	INORG	Vanadium	7440-62-2		4	4	8.30E+00	2.28E+01	5.80E+01	7.20E+03 NC	3.2E-03
P216(GM)	INORG	Zinc	7440-66-6	D	4	4	8.18E+01	1.55E+02	3.30E+02	3.10E+05 NC	5.0E-04
Notes:											
Only constituents detected at each area are shown.											
Shaded cells represent ratios of conc to screening criteria greater than 1.											
Ratios are calculated using maximum concentrations, which do not account for sediment background concentrations for inorganics.											
The sediment background is the 95th percentile background metal concentration in sediment from Lawrence County, Indiana (Wente 1994)											
The Screening Criteria for residential and industrial sediment is the lower of the integrated Screening Criteria at:											
		target cancer risk =	1E-05								
		target hazard quotient =	1								
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs) for cancer effects and Aroclor 1254 for noncancer effects.											
C - The Screening Criterion is based on cancer risk.											
Chem Group - Chemical Group											
Carc Class - EPA Weight-of-Evidence Cancer Classification											

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P002	VOC	Acetone	67-64-1	ID	3	2	7.60E-03	1.50E-02		1.60E+03	NC	9.4E-06
P002	VOC	Methyl Acetate	79-20-9		3	3	4.70E-03	2.50E-02		2.20E+04	NC	1.1E-06
P002	VOC	Tetrachloroethene	127-18-4	C-B2	3	1	1.80E-03	1.80E-03		1.50E+01	C	1.2E-04
P002	SVOC	Anthracene	120-12-7	D	3	1	2.80E-01	2.80E-01		2.20E+04	NC	1.3E-05
P002	SVOC	Benzo(a)anthracene	56-55-3	B2	3	1	2.00E+00	2.00E+00		6.20E+00	C	3.2E-01
P002	SVOC	Benzo(a)pyrene	50-32-8	B2	3	1	1.80E+00	1.80E+00		6.20E-01	C	2.9E+00
P002	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	2.40E+00	2.40E+00		6.20E+00	C	3.9E-01
P002	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	1	1.60E+00	1.60E+00		2.30E+03	NC	7.0E-04
P002	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	1	1.30E+00	1.30E+00		6.20E+01	C	2.1E-02
P002	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	2.30E-01	2.30E-01		3.50E+02	C	6.6E-04
P002	SVOC	Carbazole	86-74-8	B2	3	1	5.10E-01	5.10E-01		2.40E+02	C	2.1E-03
P002	SVOC	Chrysene	218-01-9	B2	3	1	2.80E+00	2.80E+00		6.20E+02	C	4.5E-03
P002	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	1	3.00E-01	3.00E-01		6.20E-01	C	4.8E-01
P002	SVOC	Fluoranthene	206-44-0	D	3	1	6.10E+00	6.10E+00		2.30E+03	NC	2.7E-03
P002	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	1.60E+00	1.60E+00		6.20E+00	C	2.6E-01
P002	SVOC	Phenanthrene	85-01-8	D	3	1	2.90E+00	2.90E+00		2.30E+03	NC	1.3E-03
P002	SVOC	Pyrene	129-00-0	D	3	1	6.70E+00	6.70E+00		2.30E+03	NC	2.9E-03
P002	P/PCB	PCBs (total)	1336-36-3	B2	4	4	1.57E-01	5.13E-01		2.00E+00	C	2.6E-01
P002	INORG	Aluminum	7429-90-5	D	3	3	5.43E+03	9.40E+03	3.32E+04	7.60E+04	NC	1.2E-01
P002	INORG	Arsenic	7440-38-2	A	3	3	2.90E+00	1.32E+01	2.12E+01	3.90E+00	C	3.4E+00
P002	INORG	Barium	7440-39-3	D	3	3	2.31E+01	1.74E+02	2.50E+02	5.40E+03	NC	3.2E-02
P002	INORG	Beryllium	7440-41-7	B1	3	3	2.30E-01	2.00E+00		1.50E+02	NC	1.3E-02
P002	INORG	Cadmium	7440-43-9	B1	3	3	4.80E-01	1.90E+00		3.70E+01	NC	5.1E-02
P002	INORG	Chromium (total)	7440-47-3		3	3	1.12E+01	3.54E+01	9.80E+01	2.20E+02	NC	1.6E-01
P002	INORG	Cobalt	7440-48-4	B1	3	3	3.70E+00	2.84E+01		1.40E+03	NC	2.0E-02
P002	INORG	Copper	7440-50-8	D	3	3	4.58E+01	1.57E+02	6.20E+01	3.10E+03	NC	5.1E-02
P002	INORG	Cyanide (total)	57-12-5	D	3	1	4.00E-01	4.00E-01		1.20E+03	NC	3.3E-04
P002	INORG	Iron	7439-89-6	D	3	3	7.75E+03	3.85E+04	4.90E+04	2.30E+04	NC	1.7E+00
P002	INORG	Lead	7439-92-1	B2	3	3	1.76E+01	5.40E+01	1.16E+02	4.00E+02	NC	1.4E-01
P002	INORG	Manganese	7439-96-5	D	3	3	5.69E+02	4.53E+03	1.64E+03	1.80E+03	NC	2.5E+00
P002	INORG	Mercury	7439-97-6	D	3	2	3.40E-02	4.60E-02	2.28E-01	3.67E+00	NC	1.3E-02
P002	INORG	Nickel	7440-02-0	A	3	3	1.11E+01	4.01E+01	7.00E+01	1.60E+03	NC	2.5E-02
P002	INORG	Selenium	7782-49-2	D	3	2	4.30E-01	1.10E+00		3.90E+02	NC	2.8E-03
P002	INORG	Vanadium	7440-62-2		3	3	8.30E+00	4.88E+01	5.80E+01	5.50E+02	NC	8.9E-02
P002	INORG	Zinc	7440-66-6	D	3	3	9.14E+01	2.19E+02	3.30E+02	2.30E+04	NC	9.5E-03
P023	VOC	Methyl Acetate	79-20-9		1	1	4.15E-02	4.15E-02		2.20E+04	NC	1.9E-06
P023	P/PCB	PCBs (total)	1336-36-3	B2	1	1	8.96E+00	8.96E+00		2.00E+00	C	4.5E+00
P023	INORG	Aluminum	7429-90-5	D	1	1	5.23E+03	5.23E+03	3.32E+04	7.60E+04	NC	6.9E-02

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P023	INORG	Arsenic	7440-38-2	A	1	1	4.80E+00	4.80E+00	2.12E+01	3.90E+00 C	1.2E+00
P023	INORG	Barium	7440-39-3	D	1	1	4.02E+01	4.02E+01	2.50E+02	5.40E+03 NC	7.4E-03
P023	INORG	Beryllium	7440-41-7	B1	1	1	2.30E-01	2.30E-01		1.50E+02 NC	1.5E-03
P023	INORG	Cadmium	7440-43-9	B1	1	1	6.15E-01	6.15E-01		3.70E+01 NC	1.7E-02
P023	INORG	Chromium (total)	7440-47-3		1	1	1.68E+01	1.68E+01	9.80E+01	2.20E+02 NC	7.6E-02
P023	INORG	Cobalt	7440-48-4	B1	1	1	6.00E+00	6.00E+00		1.40E+03 NC	4.3E-03
P023	INORG	Copper	7440-50-8	D	1	1	3.44E+01	3.44E+01	6.20E+01	3.10E+03 NC	1.1E-02
P023	INORG	Iron	7439-89-6	D	1	1	9.98E+03	9.98E+03	4.90E+04	2.30E+04 NC	4.3E-01
P023	INORG	Lead	7439-92-1	B2	1	1	1.42E+01	1.42E+01	1.16E+02	4.00E+02 NC	3.5E-02
P023	INORG	Manganese	7439-96-5	D	1	1	4.53E+02	4.53E+02	1.64E+03	1.80E+03 NC	2.5E-01
P023	INORG	Mercury	7439-97-6	D	1	1	6.00E-02	6.00E-02	2.28E-01	3.67E+00 NC	1.6E-02
P023	INORG	Nickel	7440-02-0	A	1	1	1.93E+01	1.93E+01	7.00E+01	1.60E+03 NC	1.2E-02
P023	INORG	Vanadium	7440-62-2		1	1	1.45E+01	1.45E+01	5.80E+01	5.50E+02 NC	2.6E-02
P023	INORG	Zinc	7440-66-6	D	1	1	6.07E+01	6.07E+01	3.30E+02	2.30E+04 NC	2.6E-03
P025	VOC	Methyl Acetate	79-20-9		2	2	2.60E-02	4.15E-02		2.20E+04 NC	1.9E-06
P025	P/PCB	PCBs (total)	1336-36-3	B2	2	2	6.65E+00	8.96E+00		2.00E+00 C	4.5E+00
P025	INORG	Aluminum	7429-90-5	D	2	2	5.19E+03	5.23E+03	3.32E+04	7.60E+04 NC	6.9E-02
P025	INORG	Arsenic	7440-38-2	A	2	2	4.80E+00	8.70E+00	2.12E+01	3.90E+00 C	2.2E+00
P025	INORG	Barium	7440-39-3	D	2	2	4.02E+01	5.11E+01	2.50E+02	5.40E+03 NC	9.5E-03
P025	INORG	Beryllium	7440-41-7	B1	2	2	2.30E-01	4.80E-01		1.50E+02 NC	3.2E-03
P025	INORG	Cadmium	7440-43-9	B1	2	2	6.15E-01	7.80E-01		3.70E+01 NC	2.1E-02
P025	INORG	Chromium (total)	7440-47-3		2	2	1.68E+01	3.67E+01	9.80E+01	2.20E+02 NC	1.7E-01
P025	INORG	Cobalt	7440-48-4	B1	2	2	6.00E+00	1.27E+01		1.40E+03 NC	9.1E-03
P025	INORG	Copper	7440-50-8	D	2	2	2.66E+01	3.44E+01	6.20E+01	3.10E+03 NC	1.1E-02
P025	INORG	Iron	7439-89-6	D	2	2	9.98E+03	2.10E+04	4.90E+04	2.30E+04 NC	9.1E-01
P025	INORG	Lead	7439-92-1	B2	2	2	1.42E+01	2.48E+01	1.16E+02	4.00E+02 NC	6.2E-02
P025	INORG	Manganese	7439-96-5	D	2	2	4.53E+02	6.35E+02	1.64E+03	1.80E+03 NC	3.5E-01
P025	INORG	Mercury	7439-97-6	D	2	2	6.00E-02	5.50E-01	2.28E-01	3.67E+00 NC	1.5E-01
P025	INORG	Nickel	7440-02-0	A	2	2	1.51E+01	1.93E+01	7.00E+01	1.60E+03 NC	1.2E-02
P025	INORG	Vanadium	7440-62-2		2	2	1.45E+01	2.77E+01	5.80E+01	5.50E+02 NC	5.0E-02
P025	INORG	Zinc	7440-66-6	D	2	2	6.07E+01	8.60E+01	3.30E+02	2.30E+04 NC	3.7E-03
P028	VOC	Acetone	67-64-1	ID	2	1	8.10E-03	8.10E-03		1.60E+03 NC	5.1E-06
P028	VOC	Methyl Acetate	79-20-9		2	2	2.60E-02	2.70E-02		2.20E+04 NC	1.2E-06
P028	P/PCB	PCBs (total)	1336-36-3	B2	2	2	6.65E+00	3.85E+01		2.00E+00 C	1.9E+01
P028	INORG	Aluminum	7429-90-5	D	2	2	5.19E+03	5.41E+03	3.32E+04	7.60E+04 NC	7.1E-02
P028	INORG	Arsenic	7440-38-2	A	2	2	6.00E+00	8.70E+00	2.12E+01	3.90E+00 C	2.2E+00
P028	INORG	Barium	7440-39-3	D	2	2	5.11E+01	5.60E+01	2.50E+02	5.40E+03 NC	1.0E-02
P028	INORG	Beryllium	7440-41-7	B1	2	2	2.60E-01	4.80E-01		1.50E+02 NC	3.2E-03

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P028	INORG	Cadmium	7440-43-9	B1	2	2	6.80E-01	7.80E-01		3.70E+01	NC	2.1E-02
P028	INORG	Chromium (total)	7440-47-3		2	2	1.63E+01	3.67E+01	9.80E+01	2.20E+02	NC	1.7E-01
P028	INORG	Cobalt	7440-48-4	B1	2	2	8.30E+00	1.27E+01		1.40E+03	NC	9.1E-03
P028	INORG	Copper	7440-50-8	D	2	2	2.66E+01	3.35E+01	6.20E+01	3.10E+03	NC	1.1E-02
P028	INORG	Iron	7439-89-6	D	2	2	1.28E+04	2.10E+04	4.90E+04	2.30E+04	NC	9.1E-01
P028	INORG	Lead	7439-92-1	B2	2	2	2.11E+01	2.48E+01	1.16E+02	4.00E+02	NC	6.2E-02
P028	INORG	Manganese	7439-96-5	D	2	2	6.35E+02	6.94E+02	1.64E+03	1.80E+03	NC	3.9E-01
P028	INORG	Mercury	7439-97-6	D	2	2	1.10E-01	5.50E-01	2.28E-01	3.67E+00	NC	1.5E-01
P028	INORG	Nickel	7440-02-0	A	2	2	1.36E+01	1.51E+01	7.00E+01	1.60E+03	NC	9.4E-03
P028	INORG	Vanadium	7440-62-2		2	2	1.75E+01	2.77E+01	5.80E+01	5.50E+02	NC	5.0E-02
P028	INORG	Zinc	7440-66-6	D	2	2	7.64E+01	8.60E+01	3.30E+02	2.30E+04	NC	3.7E-03
P030	VOC	Acetone	67-64-1	ID	2	2	1.20E-02	2.00E-02		1.60E+03	NC	1.3E-05
P030	VOC	Methyl Acetate	79-20-9		2	2	8.70E-03	1.60E-02		2.20E+04	NC	7.3E-07
P030	SVOC	Benzo(a)anthracene	56-55-3	B2	2	1	1.70E-01	1.70E-01		6.20E+00	C	2.7E-02
P030	SVOC	Benzo(a)pyrene	50-32-8	B2	2	1	1.70E-01	1.70E-01		6.20E-01	C	2.7E-01
P030	SVOC	Benzo(b)fluoranthene	205-99-2	B2	2	2	1.00E-01	1.90E-01		6.20E+00	C	3.1E-02
P030	SVOC	Benzo(k)fluoranthene	207-08-9	B2	2	1	9.50E-02	9.50E-02		6.20E+01	C	1.5E-03
P030	SVOC	Chrysene	218-01-9	B2	2	2	9.00E-02	2.10E-01		6.20E+02	C	3.4E-04
P030	SVOC	Fluoranthene	206-44-0	D	2	2	1.80E-01	4.40E-01		2.30E+03	NC	1.9E-04
P030	SVOC	Phenanthrene	85-01-8	D	2	1	3.10E-01	3.10E-01		2.30E+03	NC	1.3E-04
P030	SVOC	Pyrene	129-00-0	D	2	2	2.20E-01	5.00E-01		2.30E+03	NC	2.2E-04
P030	P/PCB	PCBs (total)	1336-36-3	B2	4	2	1.85E-01	3.98E+01		2.00E+00	C	2.0E+01
P030	INORG	Aluminum	7429-90-5	D	2	2	4.55E+03	7.43E+03	3.32E+04	7.60E+04	NC	9.8E-02
P030	INORG	Arsenic	7440-38-2	A	2	2	5.30E+00	1.26E+01	2.12E+01	3.90E+00	C	3.2E+00
P030	INORG	Barium	7440-39-3	D	2	2	4.07E+01	7.19E+01	2.50E+02	5.40E+03	NC	1.3E-02
P030	INORG	Beryllium	7440-41-7	B1	2	2	2.50E-01	5.70E-01		1.50E+02	NC	3.8E-03
P030	INORG	Cadmium	7440-43-9	B1	2	2	5.90E-01	6.90E-01		3.70E+01	NC	1.9E-02
P030	INORG	Chromium (total)	7440-47-3		2	2	1.77E+01	3.71E+01	9.80E+01	2.20E+02	NC	1.7E-01
P030	INORG	Cobalt	7440-48-4	B1	2	2	7.10E+00	1.45E+01		1.40E+03	NC	1.0E-02
P030	INORG	Copper	7440-50-8	D	2	2	1.05E+01	1.76E+01	6.20E+01	3.10E+03	NC	5.7E-03
P030	INORG	Iron	7439-89-6	D	2	2	1.19E+04	2.84E+04	4.90E+04	2.30E+04	NC	1.2E+00
P030	INORG	Lead	7439-92-1	B2	2	2	1.56E+01	2.18E+01	1.16E+02	4.00E+02	NC	5.5E-02
P030	INORG	Manganese	7439-96-5	D	2	2	4.22E+02	7.50E+02	1.64E+03	1.80E+03	NC	4.2E-01
P030	INORG	Mercury	7439-97-6	D	2	1	1.10E-01	1.10E-01	2.28E-01	3.67E+00	NC	3.0E-02
P030	INORG	Nickel	7440-02-0	A	2	2	1.10E+01	1.96E+01	7.00E+01	1.60E+03	NC	1.2E-02
P030	INORG	Silver	7440-22-4	D	2	1	4.70E-01	4.70E-01		3.90E+02	NC	1.2E-03
P030	INORG	Vanadium	7440-62-2		2	2	1.78E+01	3.45E+01	5.80E+01	5.50E+02	NC	6.3E-02
P030	INORG	Zinc	7440-66-6	D	2	2	6.33E+01	7.70E+01	3.30E+02	2.30E+04	NC	3.3E-03

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P031	VOC	Acetone	67-64-1	ID	1	1	9.80E-03	9.80E-03		1.60E+03	NC	6.1E-06
P031	VOC	Methyl Acetate	79-20-9		1	1	1.50E-02	1.50E-02		2.20E+04	NC	6.8E-07
P031	P/PCB	PCBs (total)	1336-36-3	B2	18	1	3.44E-02	3.44E-02		2.00E+00	C	1.7E-02
P031	INORG	Aluminum	7429-90-5	D	1	1	5.83E+03	5.83E+03	3.32E+04	7.60E+04	NC	7.7E-02
P031	INORG	Arsenic	7440-38-2	A	1	1	1.20E+01	1.20E+01	2.12E+01	3.90E+00	C	3.1E+00
P031	INORG	Barium	7440-39-3	D	1	1	8.64E+01	8.64E+01	2.50E+02	5.40E+03	NC	1.6E-02
P031	INORG	Beryllium	7440-41-7	B1	1	1	6.70E-01	6.70E-01		1.50E+02	NC	4.5E-03
P031	INORG	Cadmium	7440-43-9	B1	1	1	6.00E-01	6.00E-01		3.70E+01	NC	1.6E-02
P031	INORG	Chromium (total)	7440-47-3		1	1	2.50E+01	2.50E+01	9.80E+01	2.20E+02	NC	1.1E-01
P031	INORG	Cobalt	7440-48-4	B1	1	1	1.32E+01	1.32E+01		1.40E+03	NC	9.4E-03
P031	INORG	Copper	7440-50-8	D	1	1	1.00E+01	1.00E+01	6.20E+01	3.10E+03	NC	3.2E-03
P031	INORG	Iron	7439-89-6	D	1	1	2.45E+04	2.45E+04	4.90E+04	2.30E+04	NC	1.1E+00
P031	INORG	Lead	7439-92-1	B2	1	1	1.92E+01	1.92E+01	1.16E+02	4.00E+02	NC	4.8E-02
P031	INORG	Manganese	7439-96-5	D	1	1	6.37E+02	6.37E+02	1.64E+03	1.80E+03	NC	3.5E-01
P031	INORG	Nickel	7440-02-0	A	1	1	1.68E+01	1.68E+01	7.00E+01	1.60E+03	NC	1.1E-02
P031	INORG	Selenium	7782-49-2	D	1	1	2.00E+00	2.00E+00		3.90E+02	NC	5.1E-03
P031	INORG	Vanadium	7440-62-2		1	1	2.94E+01	2.94E+01	5.80E+01	5.50E+02	NC	5.3E-02
P031	INORG	Zinc	7440-66-6	D	1	1	6.96E+01	6.96E+01	3.30E+02	2.30E+04	NC	3.0E-03
P036	VOC	Acetone	67-64-1	ID	6	4	5.30E-03	6.00E-02		1.60E+03	NC	3.8E-05
P036	VOC	2-Butanone	78-93-3	ID	6	3	5.00E-03	6.80E-03		7.30E+03	NC	9.3E-07
P036	VOC	Methyl Acetate	79-20-9		6	1	4.00E-02	4.00E-02		2.20E+04	NC	1.8E-06
P036	SVOC	Anthracene	120-12-7	D	6	2	9.70E-02	1.00E-01		2.20E+04	NC	4.5E-06
P036	SVOC	Benzo(a)anthracene	56-55-3	B2	6	2	2.10E-01	7.00E-01		6.20E+00	C	1.1E-01
P036	SVOC	Benzo(a)pyrene	50-32-8	B2	6	2	1.90E-01	8.30E-01		6.20E-01	C	1.3E+00
P036	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	2	1.60E-01	7.50E-01		6.20E+00	C	1.2E-01
P036	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	2	1.20E-01	4.70E-01		2.30E+03	NC	2.0E-04
P036	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	2	1.30E-01	3.80E-01		6.20E+01	C	6.1E-03
P036	SVOC	Chrysene	218-01-9	B2	6	2	2.40E-01	7.40E-01		6.20E+02	C	1.2E-03
P036	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	6	1	1.50E-01	1.50E-01		6.20E-01	C	2.4E-01
P036	SVOC	Fluoranthene	206-44-0	D	6	2	6.10E-01	8.40E-01		2.30E+03	NC	3.7E-04
P036	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	1	4.40E-01	4.40E-01		6.20E+00	C	7.1E-02
P036	SVOC	Phenanthrene	85-01-8	D	6	2	3.30E-01	5.30E-01		2.30E+03	NC	2.3E-04
P036	SVOC	Pyrene	129-00-0	D	6	2	4.30E-01	7.00E-01		2.30E+03	NC	3.0E-04
P036	P/PCB	PCBs (total)	1336-36-3	B2	6	6	5.00E-01	2.14E+01		2.00E+00	C	1.1E+01
P036	INORG	Aluminum	7429-90-5	D	6	6	4.71E+03	7.18E+03	3.32E+04	7.60E+04	NC	9.4E-02
P036	INORG	Arsenic	7440-38-2	A	6	6	5.10E+00	7.80E+00	2.12E+01	3.90E+00	C	2.0E+00
P036	INORG	Barium	7440-39-3	D	6	6	4.79E+01	9.22E+01	2.50E+02	5.40E+03	NC	1.7E-02
P036	INORG	Beryllium	7440-41-7	B1	6	6	4.50E-01	6.60E-01		1.50E+02	NC	4.4E-03

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analysed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P036	INORG	Cadmium	7440-43-9	B1	6	6	4.40E-01	5.80E-01		3.70E+01	NC	1.6E-02
P036	INORG	Chromium (total)	7440-47-3		6	6	1.62E+01	4.05E+01	9.80E+01	2.20E+02	NC	1.8E-01
P036	INORG	Cobalt	7440-48-4	B1	6	6	9.00E+00	1.07E+01		1.40E+03	NC	7.6E-03
P036	INORG	Copper	7440-50-8	D	6	6	1.16E+01	2.13E+01	6.20E+01	3.10E+03	NC	6.9E-03
P036	INORG	Iron	7439-89-6	D	6	6	1.28E+04	2.14E+04	4.90E+04	2.30E+04	NC	9.3E-01
P036	INORG	Lead	7439-92-1	B2	6	6	1.74E+01	9.10E+01	1.16E+02	4.00E+02	NC	2.3E-01
P036	INORG	Manganese	7439-96-5	D	6	6	6.47E+02	1.12E+03	1.64E+03	1.80E+03	NC	6.2E-01
P036	INORG	Mercury	7439-97-6	D	6	3	9.80E-02	2.50E-01	2.28E-01	3.67E+00	NC	6.8E-02
P036	INORG	Nickel	7440-02-0	A	6	6	1.24E+01	1.51E+01	7.00E+01	1.60E+03	NC	9.4E-03
P036	INORG	Selenium	7782-49-2	D	6	5	5.30E-01	6.60E-01		3.90E+02	NC	1.7E-03
P036	INORG	Silver	7440-22-4	D	6	3	2.70E-01	4.50E-01		3.90E+02	NC	1.2E-03
P036	INORG	Vanadium	7440-62-2		6	6	1.71E+01	2.57E+01	5.80E+01	5.50E+02	NC	4.7E-02
P036	INORG	Zinc	7440-66-6	D	6	6	6.44E+01	8.38E+01	3.30E+02	2.30E+04	NC	3.6E-03
P038	VOC	Acetone	67-64-1	ID	2	1	8.10E-03	8.10E-03		1.60E+03	NC	5.1E-06
P038	VOC	Methyl Acetate	79-20-9		2	2	1.90E-02	4.60E-02		2.20E+04	NC	2.1E-06
P038	SVOC	Methylphenol (total)	1319-77-3		2	1	1.50E-01	1.50E-01		3.10E+02	NC	4.8E-04
P038	P/PCB	PCBs (total)	1336-36-3	B2	2	2	8.48E-01	2.04E+00		2.00E+00	C	1.0E+00
P038	INORG	Aluminum	7429-90-5	D	2	2	4.98E+03	1.23E+04	3.32E+04	7.60E+04	NC	1.6E-01
P038	INORG	Arsenic	7440-38-2	A	2	2	5.40E+00	1.49E+01	2.12E+01	3.90E+00	C	3.8E+00
P038	INORG	Barium	7440-39-3	D	2	2	4.79E+01	1.42E+02	2.50E+02	5.40E+03	NC	2.6E-02
P038	INORG	Beryllium	7440-41-7	B1	2	2	4.40E-01	1.30E+00		1.50E+02	NC	8.7E-03
P038	INORG	Cadmium	7440-43-9	B1	2	2	4.40E-01	7.60E-01		3.70E+01	NC	2.1E-02
P038	INORG	Chromium (total)	7440-47-3		2	2	1.93E+01	1.94E+01	9.80E+01	2.20E+02	NC	8.8E-02
P038	INORG	Cobalt	7440-48-4	B1	2	2	7.00E+00	1.79E+01		1.40E+03	NC	1.3E-02
P038	INORG	Copper	7440-50-8	D	2	2	1.18E+01	1.70E+01	6.20E+01	3.10E+03	NC	5.5E-03
P038	INORG	Iron	7439-89-6	D	2	2	1.37E+04	2.88E+04	4.90E+04	2.30E+04	NC	1.3E+00
P038	INORG	Lead	7439-92-1	B2	2	2	1.37E+01	2.63E+01	1.16E+02	4.00E+02	NC	6.6E-02
P038	INORG	Manganese	7439-96-5	D	2	2	1.09E+03	1.44E+03	1.64E+03	1.80E+03	NC	8.0E-01
P038	INORG	Mercury	7439-97-6	D	2	2	6.00E-02	8.70E-02	2.28E-01	3.67E+00	NC	2.4E-02
P038	INORG	Nickel	7440-02-0	A	2	2	9.70E+00	2.09E+01	7.00E+01	1.60E+03	NC	1.3E-02
P038	INORG	Vanadium	7440-62-2		2	2	1.66E+01	4.09E+01	5.80E+01	5.50E+02	NC	7.4E-02
P038	INORG	Zinc	7440-66-6	D	2	2	5.65E+01	7.83E+01	3.30E+02	2.30E+04	NC	3.4E-03
P039	VOC	Acetone	67-64-1	ID	4	3	1.00E-02	2.20E-02		1.60E+03	NC	1.4E-05
P039	VOC	2-Butanone	78-93-3	ID	4	3	4.40E-03	7.40E-03		7.30E+03	NC	1.0E-06
P039	VOC	Methyl Acetate	79-20-9		4	4	3.60E-03	1.90E-02		2.20E+04	NC	8.6E-07
P039	P/PCB	PCBs (total)	1336-36-3	B2	14	14	9.12E-02	5.43E+00		2.00E+00	C	2.7E+00
P039	INORG	Aluminum	7429-90-5	D	4	4	6.44E+03	1.23E+04	3.32E+04	7.60E+04	NC	1.6E-01
P039	INORG	Arsenic	7440-38-2	A	4	4	5.60E+00	1.49E+01	2.12E+01	3.90E+00	C	3.8E+00

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analysed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P039	INORG	Barium	7440-39-3	D	4	4	6.20E+01	1.42E+02	2.50E+02	5.40E+03	NC	2.6E-02
P039	INORG	Beryllium	7440-41-7	B1	4	4	5.80E-01	1.30E+00		1.50E+02	NC	8.7E-03
P039	INORG	Cadmium	7440-43-9	B1	4	4	4.10E-01	7.60E-01		3.70E+01	NC	2.1E-02
P039	INORG	Chromium (total)	7440-47-3		4	4	1.36E+01	1.94E+01	9.80E+01	2.20E+02	NC	8.8E-02
P039	INORG	Cobalt	7440-48-4	B1	4	4	9.50E+00	1.79E+01		1.40E+03	NC	1.3E-02
P039	INORG	Copper	7440-50-8	D	4	4	9.80E+00	2.23E+01	6.20E+01	3.10E+03	NC	7.2E-03
P039	INORG	Cyanide (amenable)	57-12-5A		4	1	1.10E+00	1.10E+00		1.20E+03	NC	9.2E-04
P039	INORG	Iron	7439-89-6	D	4	4	1.74E+04	2.88E+04	4.90E+04	2.30E+04	NC	1.3E+00
P039	INORG	Lead	7439-92-1	B2	4	4	1.86E+01	2.63E+01	1.16E+02	4.00E+02	NC	6.6E-02
P039	INORG	Manganese	7439-96-5	D	4	4	9.82E+02	1.44E+03	1.64E+03	1.80E+03	NC	8.0E-01
P039	INORG	Mercury	7439-97-6	D	4	3	4.10E-02	6.20E-02	2.28E-01	3.67E+00	NC	1.7E-02
P039	INORG	Nickel	7440-02-0	A	4	4	1.34E+01	2.09E+01	7.00E+01	1.60E+03	NC	1.3E-02
P039	INORG	Selenium	7782-49-2	D	4	2	6.60E-01	8.70E-01		3.90E+02	NC	2.2E-03
P039	INORG	Vanadium	7440-62-2		4	4	1.87E+01	4.09E+01	5.80E+01	5.50E+02	NC	7.4E-02
P039	INORG	Zinc	7440-66-6	D	4	4	6.44E+01	8.45E+01	3.30E+02	2.30E+04	NC	3.7E-03
P040	VOC	Acetone	67-64-1	ID	3	3	6.70E-03	1.75E-02		1.60E+03	NC	1.1E-05
P040	VOC	2-Butanone	78-93-3	ID	3	1	6.20E-03	6.20E-03		7.30E+03	NC	8.5E-07
P040	VOC	Methyl Acetate	79-20-9		3	3	6.80E-03	7.90E-03		2.20E+04	NC	3.6E-07
P040	P/PCB	PCBs (total)	1336-36-3	B2	8	7	2.92E-01	1.27E+01		2.00E+00	C	6.3E+00
P040	INORG	Aluminum	7429-90-5	D	3	3	7.52E+03	9.84E+03	3.32E+04	7.60E+04	NC	1.3E-01
P040	INORG	Arsenic	7440-38-2	A	3	3	7.20E+00	1.29E+01	2.12E+01	3.90E+00	C	3.3E+00
P040	INORG	Barium	7440-39-3	D	3	3	8.18E+01	1.15E+02	2.50E+02	5.40E+03	NC	2.1E-02
P040	INORG	Beryllium	7440-41-7	B1	3	3	7.30E-01	1.10E+00		1.50E+02	NC	7.3E-03
P040	INORG	Cadmium	7440-43-9	B1	3	3	6.50E-01	6.95E-01		3.70E+01	NC	1.9E-02
P040	INORG	Chromium (total)	7440-47-3		3	3	1.55E+01	1.81E+01	9.80E+01	2.20E+02	NC	8.2E-02
P040	INORG	Cobalt	7440-48-4	B1	3	3	1.07E+01	1.42E+01		1.40E+03	NC	1.0E-02
P040	INORG	Copper	7440-50-8	D	3	3	1.13E+01	2.16E+01	6.20E+01	3.10E+03	NC	7.0E-03
P040	INORG	Iron	7439-89-6	D	3	3	1.85E+04	2.93E+04	4.90E+04	2.30E+04	NC	1.3E+00
P040	INORG	Lead	7439-92-1	B2	3	3	1.92E+01	2.20E+01	1.16E+02	4.00E+02	NC	5.5E-02
P040	INORG	Manganese	7439-96-5	D	3	3	7.96E+02	1.97E+03	1.64E+03	1.80E+03	NC	1.1E+00
P040	INORG	Mercury	7439-97-6	D	3	3	2.90E-02	8.45E-02	2.28E-01	3.67E+00	NC	2.3E-02
P040	INORG	Nickel	7440-02-0	A	3	3	1.33E+01	1.89E+01	7.00E+01	1.60E+03	NC	1.2E-02
P040	INORG	Selenium	7782-49-2	D	3	1	7.90E-01	7.90E-01		3.90E+02	NC	2.0E-03
P040	INORG	Vanadium	7440-62-2		3	3	2.35E+01	3.48E+01	5.80E+01	5.50E+02	NC	6.3E-02
P040	INORG	Zinc	7440-66-6	D	3	3	5.98E+01	7.50E+01	3.30E+02	2.30E+04	NC	3.3E-03
P041	VOC	Acetone	67-64-1	ID	2	2	1.35E-02	2.20E-02		1.60E+03	NC	1.4E-05
P041	VOC	2-Butanone	78-93-3	ID	2	2	4.38E-03	7.40E-03		7.30E+03	NC	1.0E-06
P041	VOC	Methyl Acetate	79-20-9		2	2	9.30E-03	1.20E-02		2.20E+04	NC	5.5E-07

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analysed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P041	SVOC	Fluoranthene	206-44-0	D	2	1	8.50E-02	8.50E-02		2.30E+03	NC	3.7E-05
P041	P/PCB	PCBs (total)	1336-36-3	B2	2	2	1.07E-01	1.14E-01		2.00E+00	C	5.7E-02
P041	INORG	Aluminum	7429-90-5	D	2	2	8.61E+03	9.68E+03	3.32E+04	7.60E+04	NC	1.3E-01
P041	INORG	Arsenic	7440-38-2	A	2	2	5.60E+00	6.10E+00	2.12E+01	3.90E+00	C	1.6E+00
P041	INORG	Barium	7440-39-3	D	2	2	8.60E+01	9.38E+01	2.50E+02	5.40E+03	NC	1.7E-02
P041	INORG	Beryllium	7440-41-7	B1	2	2	6.60E-01	6.95E-01		1.50E+02	NC	4.6E-03
P041	INORG	Cadmium	7440-43-9	B1	2	2	4.20E-01	4.85E-01		3.70E+01	NC	1.3E-02
P041	INORG	Chromium (total)	7440-47-3		2	2	1.38E+01	1.52E+01	9.80E+01	2.20E+02	NC	6.9E-02
P041	INORG	Cobalt	7440-48-4	B1	2	2	1.00E+01	1.02E+01		1.40E+03	NC	7.3E-03
P041	INORG	Copper	7440-50-8	D	2	2	1.39E+01	1.47E+01	6.20E+01	3.10E+03	NC	4.7E-03
P041	INORG	Cyanide (amenable)	57-12-5A		2	1	1.10E+00	1.10E+00		1.20E+03	NC	9.2E-04
P041	INORG	Iron	7439-89-6	D	2	2	1.89E+04	2.00E+04	4.90E+04	2.30E+04	NC	8.7E-01
P041	INORG	Lead	7439-92-1	B2	2	2	2.00E+01	2.25E+01	1.16E+02	4.00E+02	NC	5.6E-02
P041	INORG	Manganese	7439-96-5	D	2	2	1.15E+03	1.31E+03	1.64E+03	1.80E+03	NC	7.3E-01
P041	INORG	Mercury	7439-97-6	D	2	2	3.90E-02	6.20E-02	2.28E-01	3.67E+00	NC	1.7E-02
P041	INORG	Nickel	7440-02-0	A	2	2	1.62E+01	1.72E+01	7.00E+01	1.60E+03	NC	1.1E-02
P041	INORG	Selenium	7782-49-2	D	2	2	6.33E-01	6.60E-01		3.90E+02	NC	1.7E-03
P041	INORG	Vanadium	7440-62-2		2	2	1.99E+01	2.20E+01	5.80E+01	5.50E+02	NC	4.0E-02
P041	INORG	Zinc	7440-66-6	D	2	2	8.24E+01	9.04E+01	3.30E+02	2.30E+04	NC	3.9E-03
P044	VOC	Acetone	67-64-1	ID	1	1	8.80E-03	8.80E-03		1.60E+03	NC	5.5E-06
P044	VOC	Methyl Acetate	79-20-9		1	1	1.00E-02	1.00E-02		2.20E+04	NC	4.5E-07
P044	P/PCB	PCBs (total)	1336-36-3	B2	1	1	1.40E-01	1.40E-01		2.00E+00	C	7.0E-02
P044	INORG	Aluminum	7429-90-5	D	1	1	8.59E+03	8.59E+03	3.32E+04	7.60E+04	NC	1.1E-01
P044	INORG	Arsenic	7440-38-2	A	1	1	5.30E+00	5.30E+00	2.12E+01	3.90E+00	C	1.4E+00
P044	INORG	Barium	7440-39-3	D	1	1	8.27E+01	8.27E+01	2.50E+02	5.40E+03	NC	1.5E-02
P044	INORG	Beryllium	7440-41-7	B1	1	1	6.50E-01	6.50E-01		1.50E+02	NC	4.3E-03
P044	INORG	Cadmium	7440-43-9	B1	1	1	3.80E-01	3.80E-01		3.70E+01	NC	1.0E-02
P044	INORG	Chromium (total)	7440-47-3		1	1	1.42E+01	1.42E+01	9.80E+01	2.20E+02	NC	6.5E-02
P044	INORG	Cobalt	7440-48-4	B1	1	1	9.60E+00	9.60E+00		1.40E+03	NC	6.9E-03
P044	INORG	Copper	7440-50-8	D	1	1	1.28E+01	1.28E+01	6.20E+01	3.10E+03	NC	4.1E-03
P044	INORG	Cyanide (amenable)	57-12-5A		1	1	1.10E+00	1.10E+00		1.20E+03	NC	9.2E-04
P044	INORG	Iron	7439-89-6	D	1	1	1.85E+04	1.85E+04	4.90E+04	2.30E+04	NC	8.0E-01
P044	INORG	Lead	7439-92-1	B2	1	1	1.99E+01	1.99E+01	1.16E+02	4.00E+02	NC	5.0E-02
P044	INORG	Manganese	7439-96-5	D	1	1	1.08E+03	1.08E+03	1.64E+03	1.80E+03	NC	6.0E-01
P044	INORG	Mercury	7439-97-6	D	1	1	7.70E-02	7.70E-02	2.28E-01	3.67E+00	NC	2.1E-02
P044	INORG	Nickel	7440-02-0	A	1	1	1.60E+01	1.60E+01	7.00E+01	1.60E+03	NC	1.0E-02
P044	INORG	Vanadium	7440-62-2		1	1	1.95E+01	1.95E+01	5.80E+01	5.50E+02	NC	3.5E-02
P044	INORG	Zinc	7440-66-6	D	1	1	8.09E+01	8.09E+01	3.30E+02	2.30E+04	NC	3.5E-03

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)		Ratio of Max Detect to Residential Screening Criteria
P045	VOC	Acetone	67-64-1	ID	1	1	1.35E-02	1.35E-02		1.60E+03	NC	8.4E-06
P045	VOC	2-Butanone	78-93-3	ID	1	1	4.38E-03	4.38E-03		7.30E+03	NC	6.0E-07
P045	VOC	Methyl Acetate	79-20-9		1	1	9.30E-03	9.30E-03		2.20E+04	NC	4.2E-07
P045	SVOC	Fluoranthene	206-44-0	D	1	1	8.50E-02	8.50E-02		2.30E+03	NC	3.7E-05
P045	P/PCB	PCBs (total)	1336-36-3	B2	1	1	1.07E-01	1.07E-01		2.00E+00	C	5.4E-02
P045	INORG	Aluminum	7429-90-5	D	1	1	9.68E+03	9.68E+03	3.32E+04	7.60E+04	NC	1.3E-01
P045	INORG	Arsenic	7440-38-2	A	1	1	6.10E+00	6.10E+00	2.12E+01	3.90E+00	C	1.6E+00
P045	INORG	Barium	7440-39-3	D	1	1	9.38E+01	9.38E+01	2.50E+02	5.40E+03	NC	1.7E-02
P045	INORG	Beryllium	7440-41-7	B1	1	1	6.95E-01	6.95E-01		1.50E+02	NC	4.6E-03
P045	INORG	Cadmium	7440-43-9	B1	1	1	4.85E-01	4.85E-01		3.70E+01	NC	1.3E-02
P045	INORG	Chromium (total)	7440-47-3		1	1	1.52E+01	1.52E+01	9.80E+01	2.20E+02	NC	6.9E-02
P045	INORG	Cobalt	7440-48-4	B1	1	1	1.02E+01	1.02E+01		1.40E+03	NC	7.3E-03
P045	INORG	Copper	7440-50-8	D	1	1	1.47E+01	1.47E+01	6.20E+01	3.10E+03	NC	4.7E-03
P045	INORG	Iron	7439-89-6	D	1	1	2.00E+04	2.00E+04	4.90E+04	2.30E+04	NC	8.7E-01
P045	INORG	Lead	7439-92-1	B2	1	1	2.25E+01	2.25E+01	1.16E+02	4.00E+02	NC	5.6E-02
P045	INORG	Manganese	7439-96-5	D	1	1	1.31E+03	1.31E+03	1.64E+03	1.80E+03	NC	7.3E-01
P045	INORG	Mercury	7439-97-6	D	1	1	3.90E-02	3.90E-02	2.28E-01	3.67E+00	NC	1.1E-02
P045	INORG	Nickel	7440-02-0	A	1	1	1.72E+01	1.72E+01	7.00E+01	1.60E+03	NC	1.1E-02
P045	INORG	Selenium	7782-49-2	D	1	1	6.33E-01	6.33E-01		3.90E+02	NC	1.6E-03
P045	INORG	Vanadium	7440-62-2		1	1	2.20E+01	2.20E+01	5.80E+01	5.50E+02	NC	4.0E-02
P045	INORG	Zinc	7440-66-6	D	1	1	9.04E+01	9.04E+01	3.30E+02	2.30E+04	NC	3.9E-03
P047	VOC	Acetone	67-64-1	ID	1	1	2.30E-02	2.30E-02		1.60E+03	NC	1.4E-05
P047	VOC	2-Butanone	78-93-3	ID	1	1	1.00E-02	1.00E-02		7.30E+03	NC	1.4E-06
P047	VOC	Methyl Acetate	79-20-9		1	1	1.10E-02	1.10E-02		2.20E+04	NC	5.0E-07
P047	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	1.30E-01	1.30E-01		3.50E+02	C	3.7E-04
P047	INORG	Aluminum	7429-90-5	D	1	1	7.84E+03	7.84E+03	3.32E+04	7.60E+04	NC	1.0E-01
P047	INORG	Arsenic	7440-38-2	A	1	1	8.00E+00	8.00E+00	2.12E+01	3.90E+00	C	2.1E+00
P047	INORG	Barium	7440-39-3	D	1	1	8.02E+01	8.02E+01	2.50E+02	5.40E+03	NC	1.5E-02
P047	INORG	Beryllium	7440-41-7	B1	1	1	9.20E-01	9.20E-01		1.50E+02	NC	6.1E-03
P047	INORG	Cadmium	7440-43-9	B1	1	1	7.60E-01	7.60E-01		3.70E+01	NC	2.1E-02
P047	INORG	Chromium (total)	7440-47-3		1	1	2.84E+01	2.84E+01	9.80E+01	2.20E+02	NC	1.3E-01
P047	INORG	Cobalt	7440-48-4	B1	1	1	1.31E+01	1.31E+01		1.40E+03	NC	9.4E-03
P047	INORG	Copper	7440-50-8	D	1	1	1.88E+01	1.88E+01	6.20E+01	3.10E+03	NC	6.1E-03
P047	INORG	Iron	7439-89-6	D	1	1	1.97E+04	1.97E+04	4.90E+04	2.30E+04	NC	8.6E-01
P047	INORG	Lead	7439-92-1	B2	1	1	2.60E+01	2.60E+01	1.16E+02	4.00E+02	NC	6.5E-02
P047	INORG	Manganese	7439-96-5	D	1	1	7.14E+02	7.14E+02	1.64E+03	1.80E+03	NC	4.0E-01
P047	INORG	Mercury	7439-97-6	D	1	1	9.30E-02	9.30E-02	2.28E-01	3.67E+00	NC	2.5E-02
P047	INORG	Nickel	7440-02-0	A	1	1	1.65E+01	1.65E+01	7.00E+01	1.60E+03	NC	1.0E-02

**Table 2-3b: Off-Site Sediment Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/kg)	Max Detected (mg/kg)	Sediment Background (mg/kg)	Residential Screening Criteria (TR=10 ⁻⁵ & HQ=1) (mg/kg)	Ratio of Max Detect to Residential Screening Criteria
P047	INORG	Selenium	7782-49-2	D	1	1	9.50E-01	9.50E-01		3.90E+02 NC	2.4E-03
P047	INORG	Vanadium	7440-62-2		1	1	2.59E+01	2.59E+01	5.80E+01	5.50E+02 NC	4.7E-02
P047	INORG	Zinc	7440-66-6	D	1	1	6.50E+01	6.50E+01	3.30E+02	2.30E+04 NC	2.8E-03
P057	P/PCB	PCBs (total)	1336-36-3	B2	2	2	3.83E-01	4.30E-01		2.00E+00 C	2.1E-01
P058	P/PCB	PCBs (total)	1336-36-3	B2	1	1	3.70E-01	3.70E-01		2.00E+00 C	1.9E-01
P060	P/PCB	PCBs (total)	1336-36-3	B2	4	4	4.61E-01	7.93E+00		2.00E+00 C	4.0E+00
P061	P/PCB	PCBs (total)	1336-36-3	B2	2	2	4.37E-01	7.93E+00		2.00E+00 C	4.0E+00
P062/P063	P/PCB	PCBs (total)	1336-36-3	B2	1	1	9.19E-01	9.19E-01		2.00E+00 C	4.6E-01
P064	P/PCB	PCBs (total)	1336-36-3	B2	2	2	3.48E-01	7.03E-01		2.00E+00 C	3.5E-01
P066	P/PCB	PCBs (total)	1336-36-3	B2	1	1	1.06E-01	1.06E-01		2.00E+00 C	5.3E-02
P069	P/PCB	PCBs (total)	1336-36-3	B2	2	2	3.28E-01	4.15E-01		2.00E+00 C	2.1E-01
P074	P/PCB	PCBs (total)	1336-36-3	B2	4	2	6.11E-02	7.15E-02		2.00E+00 C	3.6E-02
P081	P/PCB	PCBs (total)	1336-36-3	B2	1	1	4.88E-01	4.88E-01		2.00E+00 C	2.4E-01
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	1	1	4.30E+00	4.30E+00		2.00E+00 C	2.1E+00
P389	P/PCB	PCBs (total)	1336-36-3	B2	1	1	8.65E-01	8.65E-01		2.00E+00 C	4.3E-01
Notes:											
Only constituents detected at each area are shown.											
Shaded cells represent ratios of conc to screening criteria greater than 1.											
Ratios are calculated using maximum concentrations, which do not account for sediment background concentrations for inorganics.											
The sediment background is the 95th percentile background metal concentrations in sediment from Lawrence County, Indiana (Wente 1994)											
The Screening Criteria for residential and industrial sediment is the lower of the integrated Screening Criteria at:											
		target cancer risk =	1E-05								
		target hazard quotient =	1								
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).											
C - The Screening Criterion is based on cancer risk.											
NC - The Screening Criterion is based on noncancer effects.											
Chem Group - Chemical Group											
Carc Class - EPA Weight-of-Evidence Cancer Classification											

**Table 2-4: Surface Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A001	VOC	Bromodichloromethane	75-27-4	T	B2	4	2	3.05E-04	1.30E-03	1.00E-01	1.3E-02
ON	A001	VOC	Chloroform	67-66-3	T	B2	4	2	1.40E-03	1.70E-02	1.00E-01	1.7E-01
ON	A001	VOC	Dibromochloromethane	124-48-1	T	C	4	1	3.00E-04	3.00E-04	8.00E-02	3.8E-03
ON	A001	VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	4	1	8.30E-04	8.30E-04	7.00E-02	1.2E-02
ON	A001	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	4	2	8.25E-03	9.80E-03	6.00E-03	1.6E+00
ON	A001	P/PCB	PCBs (total)	1336-36-3	T	B2	4	2	1.08E-03	1.71E-03	5.00E-04	3.4E+00
ON	A001	INORG	Aluminum	7429-90-5	T	D	4	1	3.40E-02	3.40E-02	3.70E+01	9.2E-04
ON	A001	INORG	Antimony	7440-36-0	T		4	2	9.20E-03	1.10E-02	6.00E-03	1.8E+00
ON	A001	INORG	Antimony	7440-36-0	D		4	2	9.30E-03	1.30E-02	6.00E-03	2.2E+00
ON	A001	INORG	Barium	7440-39-3	T	D	4	4	3.40E-02	5.60E-02	2.00E+00	2.8E-02
ON	A001	INORG	Barium	7440-39-3	D	D	4	4	3.60E-02	6.10E-02	2.00E+00	3.1E-02
ON	A001	INORG	Copper	7440-50-8	T	D	4	4	5.70E-03	2.20E-02	1.30E+00	1.7E-02
ON	A001	INORG	Copper	7440-50-8	D	D	4	4	5.60E-03	7.60E-03	1.30E+00	5.8E-03
ON	A001	INORG	Iron	7439-89-6	T	D	4	1	1.30E-01	1.30E-01	1.10E+01	1.2E-02
ON	A001	INORG	Manganese	7439-96-5	T	D	4	4	5.60E-03	2.70E-02	8.80E-01	3.1E-02
ON	A001	INORG	Manganese	7439-96-5	D	D	4	4	3.40E-03	2.50E-02	8.80E-01	2.8E-02
ON	A001	INORG	Zinc	7440-66-6	T	D	4	2	1.00E-02	2.70E-02	1.10E+01	2.5E-03
ON	A001	INORG	Zinc	7440-66-6	D	D	4	1	2.80E-02	2.80E-02	1.10E+01	2.5E-03
ON	A004	P/PCB	PCBs (total)	1336-36-3	T	B2	3	2	2.48E-04	1.68E-03	5.00E-04	3.4E+00
ON	A006	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	6.88E-04	6.88E-04	5.00E-04	1.4E+00
ON	A010	P/PCB	PCBs (total)	1336-36-3	T	B2	9	8	3.28E-04	4.95E-02	5.00E-04	9.9E+01
ON	A010	INORG	Aluminum	7429-90-5	T	D	1	1	4.70E-01	4.70E-01	3.70E+01	1.3E-02
ON	A010	INORG	Aluminum	7429-90-5	D	D	1	1	1.70E-01	1.70E-01	3.70E+01	4.6E-03
ON	A010	INORG	Barium	7440-39-3	T	D	1	1	2.10E-02	2.10E-02	2.00E+00	1.1E-02
ON	A010	INORG	Barium	7440-39-3	D	D	1	1	2.20E-02	2.20E-02	2.00E+00	1.1E-02
ON	A010	INORG	Copper	7440-50-8	T	D	1	1	8.00E-03	8.00E-03	1.30E+00	6.2E-03
ON	A010	INORG	Copper	7440-50-8	D	D	1	1	6.70E-03	6.70E-03	1.30E+00	5.2E-03
ON	A010	INORG	Mercury	7439-97-6	T	D	1	1	1.30E-04	1.30E-04	2.00E-03	6.5E-02
ON	P201(GM)	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	7.23E-04	7.23E-04	5.00E-04	1.4E+00
ON	P215(GM)	VOC	Acetone	67-64-1	T	ID	3	1	6.70E-04	6.70E-04	3.70E+00	1.8E-04
ON	P215(GM)	VOC	Carbon Disulfide	75-15-0	T		3	1	3.50E-04	3.50E-04	3.70E+00	9.5E-05
ON	P215(GM)	VOC	Chlorobenzene	108-90-7	T	D	3	1	3.40E-04	3.40E-04	1.00E-01	3.4E-03
ON	P215(GM)	VOC	1,3-Dichlorobenzene	541-73-1	T	D	3	1	2.10E-04	2.10E-04	3.30E-02	6.4E-03
ON	P215(GM)	VOC	1,4-Dichlorobenzene	106-46-7	T	C	3	1	5.10E-04	5.10E-04	7.50E-02	6.8E-03
ON	P215(GM)	SVOC	Di-n-butylphthalate	84-74-2	T	D	3	1	9.40E-04	9.40E-04	3.70E+00	2.5E-04
ON	P215(GM)	P/PCB	PCBs (total)	1336-36-3	T	B2	3	3	1.51E-03	2.21E-03	5.00E-04	4.4E+00
ON	P215(GM)	P/PCB	PCBs (total)	1336-36-3	D	B2	3	1	6.58E-04	6.58E-04	5.00E-04	1.3E+00
ON	P215(GM)	INORG	Aluminum	7429-90-5	T	D	3	2	4.90E-02	1.68E+01	3.70E+01	4.5E-01
ON	P215(GM)	INORG	Aluminum	7429-90-5	D	D	3	1	5.80E-02	5.80E-02	3.70E+01	1.6E-03

**Table 2-4: Surface Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	P215(GM)	INORG	Antimony	7440-36-0	T		3	1	4.20E-03	4.20E-03	6.00E-03	7.0E-01
ON	P215(GM)	INORG	Antimony	7440-36-0	D		3	2	2.30E-03	2.50E-03	6.00E-03	4.2E-01
ON	P215(GM)	INORG	Arsenic	7440-38-2	T	A	3	1	2.70E-01	2.70E-01	5.00E-02	5.4E+00
ON	P215(GM)	INORG	Barium	7440-39-3	T	D	3	3	4.70E-02	6.60E-01	2.00E+00	3.3E-01
ON	P215(GM)	INORG	Barium	7440-39-3	D	D	3	3	4.60E-02	8.50E-02	2.00E+00	4.3E-02
ON	P215(GM)	INORG	Beryllium	7440-41-7	T	B1	3	1	9.70E-04	9.70E-04	4.00E-03	2.4E-01
ON	P215(GM)	INORG	Cadmium	7440-43-9	T	B1	3	1	2.30E-03	2.30E-03	5.00E-03	4.6E-01
ON	P215(GM)	INORG	Chromium (total)	7440-47-3	T		3	1	2.20E-02	2.20E-02	1.00E-01	2.2E-01
ON	P215(GM)	INORG	Cobalt	7440-48-4	T	B1	3	1	4.40E-02	4.40E-02	7.30E-01	6.0E-02
ON	P215(GM)	INORG	Cobalt	7440-48-4	D	B1	3	1	1.80E-03	1.80E-03	7.30E-01	2.5E-03
ON	P215(GM)	INORG	Copper	7440-50-8	T	D	3	1	3.70E-01	3.70E-01	1.30E+00	2.8E-01
ON	P215(GM)	INORG	Iron	7439-89-6	T	D	3	3	2.20E-01	5.38E+02	1.10E+01	4.9E+01
ON	P215(GM)	INORG	Iron	7439-89-6	D	D	3	1	1.00E-01	1.00E-01	1.10E+01	9.1E-03
ON	P215(GM)	INORG	Lead	7439-92-1	T	B2	3	1	3.50E-02	3.50E-02	1.50E-02	2.3E+00
ON	P215(GM)	INORG	Manganese	7439-96-5	T	D	3	3	1.50E-01	2.94E+01	8.80E-01	3.3E+01
ON	P215(GM)	INORG	Manganese	7439-96-5	D	D	3	3	1.40E-01	1.30E+00	8.80E-01	1.5E+00
ON	P215(GM)	INORG	Mercury	7439-97-6	T	D	3	1	1.20E-04	1.20E-04	2.00E-03	6.0E-02
ON	P215(GM)	INORG	Nickel	7440-02-0	T	A	3	2	2.60E-03	4.80E-02	7.30E-01	6.6E-02
ON	P215(GM)	INORG	Vanadium	7440-62-2	T		3	1	1.90E-02	1.90E-02	2.60E-01	7.3E-02
ON	P215(GM)	INORG	Zinc	7440-66-6	T	D	3	1	2.60E-01	2.60E-01	1.10E+01	2.4E-02
ON	P216(GM)	VOC	Acetone	67-64-1	T	ID	2	1	6.70E-04	6.70E-04	3.70E+00	1.8E-04
ON	P216(GM)	SVOC	Di-n-butylphthalate	84-74-2	T	D	2	1	9.40E-04	9.40E-04	3.70E+00	2.5E-04
ON	P216(GM)	P/PCB	PCBs (total)	1336-36-3	T	B2	5	5	1.11E-03	2.48E-03	5.00E-04	5.0E+00
ON	P216(GM)	P/PCB	PCBs (total)	1336-36-3	D	B2	4	1	6.58E-04	6.58E-04	5.00E-04	1.3E+00
ON	P216(GM)	INORG	Aluminum	7429-90-5	T	D	2	1	4.90E-02	4.90E-02	3.70E+01	1.3E-03
ON	P216(GM)	INORG	Antimony	7440-36-0	D		2	2	2.30E-03	2.50E-03	6.00E-03	4.2E-01
ON	P216(GM)	INORG	Barium	7440-39-3	T	D	2	2	4.70E-02	9.00E-02	2.00E+00	4.5E-02
ON	P216(GM)	INORG	Barium	7440-39-3	D	D	2	2	4.60E-02	8.50E-02	2.00E+00	4.3E-02
ON	P216(GM)	INORG	Iron	7439-89-6	T	D	2	2	2.20E-01	3.50E-01	1.10E+01	3.2E-02
ON	P216(GM)	INORG	Manganese	7439-96-5	T	D	2	2	1.50E-01	4.70E-01	8.80E-01	5.3E-01
ON	P216(GM)	INORG	Manganese	7439-96-5	D	D	2	2	1.40E-01	4.50E-01	8.80E-01	5.1E-01
ON	P216(GM)	INORG	Nickel	7440-02-0	T	A	2	1	2.60E-03	2.60E-03	7.30E-01	3.6E-03
OFF	P002	VOC	Chloroform	67-66-3	T	B2	2	1	1.50E-04	1.50E-04	1.00E-01	1.5E-03
OFF	P002	VOC	Tetrachloroethene	127-18-4	T	C-B2	2	2	4.60E-04	6.30E-04	5.00E-03	1.3E-01
OFF	P002	VOC	Trichloroethene	79-01-6	T	C-B2	2	2	1.60E-04	2.40E-04	5.00E-03	4.8E-02
OFF	P002	SVOC	Di-n-butylphthalate	84-74-2	T	D	2	1	7.90E-04	7.90E-04	3.70E+00	2.1E-04
OFF	P002	P/PCB	PCBs (total)	1336-36-3	T	B2	3	2	2.85E-04	2.88E-04	5.00E-04	5.8E-01
OFF	P002	INORG	Aluminum	7429-90-5	T	D	2	2	3.30E-01	3.80E-01	3.70E+01	1.0E-02
OFF	P002	INORG	Antimony	7440-36-0	T		2	1	2.70E-03	2.70E-03	6.00E-03	4.5E-01

**Table 2-4: Surface Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P002	INORG	Antimony	7440-36-0	D		2	1	2.70E-03	2.70E-03	6.00E-03	4.5E-01
OFF	P002	INORG	Barium	7440-39-3	T	D	2	2	6.60E-02	9.00E-02	2.00E+00	4.5E-02
OFF	P002	INORG	Barium	7440-39-3	D	D	2	2	6.40E-02	8.60E-02	2.00E+00	4.3E-02
OFF	P002	INORG	Iron	7439-89-6	T	D	2	2	2.00E-01	4.80E-01	1.10E+01	4.4E-02
OFF	P002	INORG	Manganese	7439-96-5	T	D	2	2	8.40E-02	1.00E-01	8.80E-01	1.1E-01
OFF	P002	INORG	Manganese	7439-96-5	D	D	2	2	4.50E-02	6.50E-02	8.80E-01	7.4E-02
OFF	P031	SVOC	Di-n-butylphthalate	84-74-2	T	D	2	1	9.20E-04	9.20E-04	3.70E+00	2.5E-04
OFF	P031	P/PCB	PCBs (total)	1336-36-3	D	B2	10	1	5.09E-03	5.09E-03	5.00E-04	1.0E+01
OFF	P031	INORG	Aluminum	7429-90-5	T	D	2	1	1.70E-01	1.70E-01	3.70E+01	4.6E-03
OFF	P031	INORG	Antimony	7440-36-0	D		2	1	3.00E-03	3.00E-03	6.00E-03	5.0E-01
OFF	P031	INORG	Barium	7440-39-3	T	D	2	2	4.20E-02	7.10E-02	2.00E+00	3.6E-02
OFF	P031	INORG	Barium	7440-39-3	D	D	2	2	3.90E-02	7.10E-02	2.00E+00	3.6E-02
OFF	P031	INORG	Calcium	7440-70-2	T		1	1	7.86E+01	7.86E+01		
OFF	P031	INORG	Iron	7439-89-6	T	D	2	1	1.70E-01	1.70E-01	1.10E+01	1.5E-02
OFF	P031	INORG	Magnesium	7439-95-4	T		1	1	6.30E+00	6.30E+00		
OFF	P031	INORG	Manganese	7439-96-5	T	D	2	2	1.20E-02	1.30E-02	8.80E-01	1.5E-02
OFF	P031	INORG	Manganese	7439-96-5	D	D	2	2	5.70E-03	1.20E-02	8.80E-01	1.4E-02
OFF	P031	INORG	Thallium	7440-28-0	D		2	1	5.60E-03	5.60E-03	2.00E-03	2.8E+00
OFF	P038	INORG	Calcium	7440-70-2	T		1	1	8.39E+01	8.39E+01		
OFF	P038	INORG	Magnesium	7439-95-4	T		1	1	9.40E+00	9.40E+00		
OFF	P039	VOC	Acetone	67-64-1	T	ID	4	1	1.40E-02	1.40E-02	3.70E+00	3.8E-03
OFF	P039	VOC	Bromodichloromethane	75-27-4	T	B2	4	1	7.30E-03	7.30E-03	1.00E-01	7.3E-02
OFF	P039	VOC	Chloroform	67-66-3	T	B2	4	2	2.90E-04	1.30E-02	1.00E-01	1.3E-01
OFF	P039	VOC	Chloromethane	74-87-3	T	D	4	2	1.40E-04	1.40E-04	5.20E-02	2.7E-03
OFF	P039	P/PCB	PCBs (total)	1336-36-3	T	B2	5	2	5.58E-04	6.48E-04	5.00E-04	1.3E+00
OFF	P039	P/PCB	PCBs (total)	1336-36-3	D	B2	4	1	3.28E-04	3.28E-04	5.00E-04	6.6E-01
OFF	P039	INORG	Aluminum	7429-90-5	T	D	4	1	3.90E-01	3.90E-01	3.70E+01	1.1E-02
OFF	P039	INORG	Aluminum	7429-90-5	D	D	4	1	4.00E-02	4.00E-02	3.70E+01	1.1E-03
OFF	P039	INORG	Antimony	7440-36-0	T		4	1	3.50E-03	3.50E-03	6.00E-03	5.8E-01
OFF	P039	INORG	Barium	7440-39-3	T	D	4	4	2.20E-02	7.20E-02	2.00E+00	3.6E-02
OFF	P039	INORG	Barium	7440-39-3	D	D	4	4	2.00E-02	7.70E-02	2.00E+00	3.9E-02
OFF	P039	INORG	Cadmium	7440-43-9	D	B1	4	1	4.10E-04	4.10E-04	5.00E-03	8.2E-02
OFF	P039	INORG	Cyanide (total)	57-12-5	T	D	4	1	1.70E-03	1.70E-03	2.00E-01	8.5E-03
OFF	P039	INORG	Iron	7439-89-6	T	D	4	4	1.70E-01	3.90E-01	1.10E+01	3.5E-02
OFF	P039	INORG	Manganese	7439-96-5	T	D	4	4	2.60E-02	3.00E-01	8.80E-01	3.4E-01
OFF	P039	INORG	Manganese	7439-96-5	D	D	4	4	1.30E-02	2.70E-01	8.80E-01	3.1E-01
OFF	P039	INORG	Nickel	7440-02-0	T	A	4	2	2.20E-03	4.10E-03	7.30E-01	5.6E-03
OFF	P039	INORG	Nickel	7440-02-0	D	A	4	1	5.00E-03	5.00E-03	7.30E-01	6.8E-03
OFF	P039	INORG	Vanadium	7440-62-2	T		4	2	1.40E-03	1.60E-03	2.60E-01	6.2E-03

**Table 2-4: Surface Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P039	INORG	Vanadium	7440-62-2	D		4	1	9.90E-04	9.90E-04	2.60E-01	3.8E-03
OFF	P039	INORG	Zinc	7440-66-6	D	D	4	1	2.90E-02	2.90E-02	1.10E+01	2.6E-03
OFF	P040	VOC	Acetone	67-64-1	T	ID	2	2	5.10E-04	1.70E-02	3.70E+00	4.6E-03
OFF	P040	VOC	Bromodichloromethane	75-27-4	T	B2	2	1	7.80E-03	7.80E-03	1.00E-01	7.8E-02
OFF	P040	VOC	Chloroform	67-66-3	T	B2	2	1	1.40E-02	1.40E-02	1.00E-01	1.4E-01
OFF	P040	P/PCB	PCBs (total)	1336-36-3	T	B2	2	2	3.88E-04	4.58E-04	5.00E-04	9.2E-01
OFF	P040	INORG	Aluminum	7429-90-5	T	D	2	1	7.90E-01	7.90E-01	3.70E+01	2.1E-02
OFF	P040	INORG	Barium	7440-39-3	T	D	2	2	3.00E-02	8.00E-02	2.00E+00	4.0E-02
OFF	P040	INORG	Barium	7440-39-3	D	D	2	2	2.80E-02	8.40E-02	2.00E+00	4.2E-02
OFF	P040	INORG	Cadmium	7440-43-9	T	B1	2	1	2.90E-04	2.90E-04	5.00E-03	5.8E-02
OFF	P040	INORG	Cadmium	7440-43-9	D	B1	2	1	3.50E-04	3.50E-04	5.00E-03	7.0E-02
OFF	P040	INORG	Iron	7439-89-6	T	D	2	2	2.00E-01	6.60E-01	1.10E+01	6.0E-02
OFF	P040	INORG	Manganese	7439-96-5	T	D	2	2	2.30E-02	7.40E-02	8.80E-01	8.4E-02
OFF	P040	INORG	Manganese	7439-96-5	D	D	2	1	7.20E-02	7.20E-02	8.80E-01	8.2E-02
OFF	P040	INORG	Mercury	7439-97-6	T	D	2	1	4.90E-04	4.90E-04	2.00E-03	2.5E-01
OFF	P040	INORG	Nickel	7440-02-0	T	A	2	1	4.50E-03	4.50E-03	7.30E-01	6.2E-03
OFF	P040	INORG	Nickel	7440-02-0	D	A	2	1	4.00E-03	4.00E-03	7.30E-01	5.5E-03
OFF	P040	INORG	Vanadium	7440-62-2	T		2	1	1.50E-03	1.50E-03	2.60E-01	5.8E-03
OFF	P040	INORG	Zinc	7440-66-6	D	D	2	1	2.40E-02	2.40E-02	1.10E+01	2.2E-03
OFF	P044	VOC	Chloromethane	74-87-3	T	D	2	1	1.08E-04	1.08E-04	5.20E-02	2.1E-03
OFF	P044	INORG	Aluminum	7429-90-5	T	D	2	1	3.60E-01	3.60E-01	3.70E+01	9.7E-03
OFF	P044	INORG	Aluminum	7429-90-5	D	D	2	1	1.00E-01	1.00E-01	3.70E+01	2.7E-03
OFF	P044	INORG	Barium	7440-39-3	T	D	2	2	2.25E-02	3.70E-02	2.00E+00	1.9E-02
OFF	P044	INORG	Barium	7440-39-3	D	D	2	2	2.05E-02	3.50E-02	2.00E+00	1.8E-02
OFF	P044	INORG	Iron	7439-89-6	T	D	2	2	3.50E-01	4.60E-01	1.10E+01	4.2E-02
OFF	P044	INORG	Iron	7439-89-6	D	D	2	1	8.90E-02	8.90E-02	1.10E+01	8.1E-03
OFF	P044	INORG	Manganese	7439-96-5	T	D	2	2	2.55E-02	3.20E-01	8.80E-01	3.6E-01
OFF	P044	INORG	Manganese	7439-96-5	D	D	2	2	1.50E-02	3.00E-01	8.80E-01	3.4E-01
OFF	P044	INORG	Vanadium	7440-62-2	T		2	1	1.30E-03	1.30E-03	2.60E-01	5.0E-03
OFF	P044	INORG	Vanadium	7440-62-2	D		2	1	9.10E-04	9.10E-04	2.60E-01	3.5E-03
OFF	P044	INORG	Zinc	7440-66-6	D	D	2	1	9.00E-03	9.00E-03	1.10E+01	8.2E-04
OFF	P047	VOC	Acetone	67-64-1	T	ID	2	1	7.60E-04	7.60E-04	3.70E+00	2.1E-04
OFF	P047	INORG	Aluminum	7429-90-5	T	D	2	2	8.90E-02	7.90E-01	3.70E+01	2.1E-02
OFF	P047	INORG	Barium	7440-39-3	T	D	2	2	3.50E-02	6.80E-02	2.00E+00	3.4E-02
OFF	P047	INORG	Barium	7440-39-3	D	D	2	2	3.30E-02	6.70E-02	2.00E+00	3.4E-02
OFF	P047	INORG	Iron	7439-89-6	T	D	2	2	1.70E-01	6.10E-01	1.10E+01	5.5E-02
OFF	P047	INORG	Manganese	7439-96-5	T	D	2	2	2.00E-02	7.30E-02	8.80E-01	8.3E-02
OFF	P047	INORG	Manganese	7439-96-5	D	D	2	1	7.20E-02	7.20E-02	8.80E-01	8.2E-02
OFF	P047	INORG	Mercury	7439-97-6	T	D	2	1	1.30E-04	1.30E-04	2.00E-03	6.5E-02

Table 2-4: Surface Water Screening Results Bedford, Indiana												
On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P047	INORG	Thallium	7440-28-0	T		2	1	7.10E-03	7.10E-03	2.00E-03	3.6E+00
OFF	P047	INORG	Thallium	7440-28-0	D		2	1	6.00E-03	6.00E-03	2.00E-03	3.0E+00
OFF	P061	P/PCB	PCBs (total)	1336-36-3	D	B2	3	1	4.28E-03	4.28E-03	5.00E-04	8.6E+00
OFF	P074	P/PCB	PCBs (total)	1336-36-3	D	B2	5	1	1.77E-04	1.77E-04	5.00E-04	3.5E-01
OFF	P384/P386	P/PCB	PCBs (total)	1336-36-3	T	B2	3	2	2.75E-04	6.33E-03	5.00E-04	1.3E+01
OFF	P400	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	6.88E-04	6.88E-04	5.00E-04	1.4E+00
Notes:												
Only constituents detected at each area are shown.												
Shaded cells represent ratios of conc to screening criteria greater than 1.												
The Screening Criteria hierarchy is State MCL, Fed MCL, the lower of the integrated Screening Criteria at:												
		target cancer risk =		1E-05								
		target hazard quotient =		1								
The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.												
The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).												
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).												
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.												
Chem Group - Chemical Group												
Meas Basis - Measured Basis; T = Total, D = Dissolved												
Carc Class - EPA Weight-of-Evidence Cancer Classification												

**Table 2-5: Spring Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A004	VOC	Carbon Disulfide	75-15-0	T		3	1	3.70E-04	3.70E-04	3.70E+00	1.0E-04
ON	A004	VOC	Chlorobenzene	108-90-7	T	D	3	2	1.80E-04	2.90E-04	1.00E-01	2.9E-03
ON	A004	VOC	1,3-Dichlorobenzene	541-73-1	T	D	3	1	1.50E-04	1.50E-04	3.30E-02	4.5E-03
ON	A004	VOC	1,4-Dichlorobenzene	106-46-7	T	C	3	2	2.70E-04	2.90E-04	7.50E-02	3.9E-03
ON	A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	3	1	2.13E-03	2.13E-03	6.00E-03	3.5E-01
ON	A004	P/PCB	PCBs (total)	1336-36-3	T	B2	3	3	2.51E-03	4.71E-03	5.00E-04	9.4E+00
ON	A004	INORG	Aluminum	7429-90-5	T	D	3	2	9.70E+00	5.62E+01	3.70E+01	1.5E+00
ON	A004	INORG	Antimony	7440-36-0	T		3	1	4.30E-03	4.30E-03	6.00E-03	7.2E-01
ON	A004	INORG	Arsenic	7440-38-2	T	A	3	2	1.50E-02	8.10E-02	5.00E-02	1.6E+00
ON	A004	INORG	Barium	7440-39-3	T	D	3	3	6.60E-02	8.90E-01	2.00E+00	4.5E-01
ON	A004	INORG	Barium	7440-39-3	D	D	3	3	6.40E-02	9.30E-02	2.00E+00	4.7E-02
ON	A004	INORG	Beryllium	7440-41-7	T	B1	3	1	1.40E-03	1.40E-03	4.00E-03	3.5E-01
ON	A004	INORG	Chromium (total)	7440-47-3	T		3	2	1.40E-02	8.70E-02	1.00E-01	8.7E-01
ON	A004	INORG	Cobalt	7440-48-4	T	B1	3	2	2.20E-02	1.20E-01	7.30E-01	1.6E-01
ON	A004	INORG	Copper	7440-50-8	T	D	3	2	7.70E-02	3.80E-01	1.30E+00	2.9E-01
ON	A004	INORG	Iron	7439-89-6	T	D	3	3	3.10E-01	3.06E+02	1.10E+01	2.8E+01
ON	A004	INORG	Lead	7439-92-1	T	B2	3	2	9.40E-03	6.70E-02	1.50E-02	4.5E+00
ON	A004	INORG	Manganese	7439-96-5	T	D	3	3	5.35E-01	5.74E+01	8.80E-01	6.5E+01
ON	A004	INORG	Manganese	7439-96-5	D	D	3	3	2.60E-01	7.10E-01	8.80E-01	8.1E-01
ON	A004	INORG	Mercury	7439-97-6	T	D	3	2	5.80E-04	1.00E-03	2.00E-03	5.0E-01
ON	A004	INORG	Nickel	7440-02-0	T	A	3	2	2.50E-02	1.50E-01	7.30E-01	2.1E-01
ON	A004	INORG	Silver	7440-22-4	T	D	3	1	3.10E-03	3.10E-03	1.80E-01	1.7E-02
ON	A004	INORG	Thallium	7440-28-0	T		3	2	7.80E-03	9.80E-03	2.00E-03	4.9E+00
ON	A004	INORG	Thallium	7440-28-0	D		3	2	8.25E-03	8.50E-03	2.00E-03	4.3E+00
ON	A004	INORG	Vanadium	7440-62-2	T		3	2	1.60E-02	9.60E-02	2.60E-01	3.7E-01
ON	A004	INORG	Zinc	7440-66-6	T	D	3	2	7.10E-02	4.20E-01	1.10E+01	3.8E-02
ON	A004	INORG	Zinc	7440-66-6	D	D	3	1	9.50E-03	9.50E-03	1.10E+01	8.6E-04
ON	A004a	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1	1	2.13E-03	2.13E-03	6.00E-03	3.5E-01
ON	A004a	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	4.41E-03	4.41E-03	5.00E-04	8.8E+00
ON	A004a	INORG	Barium	7440-39-3	T	D	1	1	6.60E-02	6.60E-02	2.00E+00	3.3E-02
ON	A004a	INORG	Barium	7440-39-3	D	D	1	1	6.40E-02	6.40E-02	2.00E+00	3.2E-02
ON	A004a	INORG	Iron	7439-89-6	T	D	1	1	3.10E-01	3.10E-01	1.10E+01	2.8E-02
ON	A004a	INORG	Manganese	7439-96-5	T	D	1	1	5.35E-01	5.35E-01	8.80E-01	6.1E-01
ON	A004a	INORG	Manganese	7439-96-5	D	D	1	1	5.15E-01	5.15E-01	8.80E-01	5.9E-01
ON	A004a	INORG	Thallium	7440-28-0	T		1	1	7.80E-03	7.80E-03	2.00E-03	3.9E+00
ON	A004a	INORG	Thallium	7440-28-0	D		1	1	8.25E-03	8.25E-03	2.00E-03	4.1E+00
ON	A004a	INORG	Zinc	7440-66-6	D	D	1	1	9.50E-03	9.50E-03	1.10E+01	8.6E-04

**Table 2-5: Spring Water Screening Results
Bedford, Indiana**

On/Off- Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A010	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1	1	2.13E-03	2.13E-03	6.00E-03	3.5E-01
ON	A010	P/PCB	PCBs (total)	1336-36-3	T	B2	3	1	4.41E-03	4.41E-03	5.00E-04	8.8E+00
ON	A010	INORG	Barium	7440-39-3	T	D	1	1	6.60E-02	6.60E-02	2.00E+00	3.3E-02
ON	A010	INORG	Barium	7440-39-3	D	D	1	1	6.40E-02	6.40E-02	2.00E+00	3.2E-02
ON	A010	INORG	Iron	7439-89-6	T	D	1	1	3.10E-01	3.10E-01	1.10E+01	2.8E-02
ON	A010	INORG	Manganese	7439-96-5	T	D	1	1	5.35E-01	5.35E-01	8.80E-01	6.1E-01
ON	A010	INORG	Manganese	7439-96-5	D	D	1	1	5.15E-01	5.15E-01	8.80E-01	5.9E-01
ON	A010	INORG	Thallium	7440-28-0	T		1	1	7.80E-03	7.80E-03	2.00E-03	3.9E+00
ON	A010	INORG	Thallium	7440-28-0	D		1	1	8.25E-03	8.25E-03	2.00E-03	4.1E+00
ON	A010	INORG	Zinc	7440-66-6	D	D	1	1	9.50E-03	9.50E-03	1.10E+01	8.6E-04
OFF	P027	P/PCB	PCBs (total)	1336-36-3	T	B2	4	1	1.11E-03	1.11E-03	5.00E-04	2.2E+00
OFF	P384/P386	VOC	Benzene	71-43-2	T	A	1	1	1.70E-04	1.70E-04	5.00E-03	3.4E-02
OFF	P384/P386	VOC	Ethyl Benzene	100-41-4	T	D	1	1	3.30E-04	3.30E-04	7.00E-01	4.7E-04
OFF	P384/P386	VOC	Methyl tert-butyl ether	1634-04-4	T		1	1	3.50E-04	3.50E-04	2.00E-01	1.8E-03
OFF	P384/P386	VOC	Toluene	108-88-3	T	D	1	1	9.10E-04	9.10E-04	1.00E+00	9.1E-04
OFF	P384/P386	VOC	Xylenes (total)	1330-20-7	T	ID	1	1	4.40E-04	4.40E-04	1.00E+01	4.4E-05
OFF	P384/P386	SVOC	Acenaphthene	83-32-9	T		1	1	9.50E-04	9.50E-04	2.20E+00	4.3E-04
OFF	P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1	1	3.50E-03	3.50E-03	6.00E-03	5.8E-01
OFF	P384/P386	SVOC	2-Methylnaphthalene	91-57-6	T	ID	1	1	8.20E-04	8.20E-04	7.30E-01	1.1E-03
OFF	P384/P386	SVOC	Naphthalene	91-20-3	T	C	1	1	4.30E-03	4.30E-03	7.30E-01	5.9E-03
OFF	P384/P386	SVOC	Phenanthrene	85-01-8	T	D	1	1	9.90E-04	9.90E-04	1.10E+00	9.0E-04
OFF	P384/P386	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	6.03E-04	6.03E-04	5.00E-04	1.2E+00
OFF	P384/P386	INORG	Aluminum	7429-90-5	T	D	1	1	1.30E+00	1.30E+00	3.70E+01	3.5E-02
OFF	P384/P386	INORG	Barium	7440-39-3	T	D	1	1	2.60E-01	2.60E-01	2.00E+00	1.3E-01
OFF	P384/P386	INORG	Barium	7440-39-3	D	D	1	1	2.50E-01	2.50E-01	2.00E+00	1.3E-01
OFF	P384/P386	INORG	Chromium (total)	7440-47-3	T		1	1	3.60E-03	3.60E-03	1.00E-01	3.6E-02
OFF	P384/P386	INORG	Chromium (total)	7440-47-3	D		1	1	2.00E-03	2.00E-03	1.00E-01	2.0E-02
OFF	P384/P386	INORG	Iron	7439-89-6	T	D	1	1	4.26E+01	4.26E+01	1.10E+01	3.9E+00
OFF	P384/P386	INORG	Iron	7439-89-6	D	D	1	1	3.99E+01	3.99E+01	1.10E+01	3.6E+00
OFF	P384/P386	INORG	Lead	7439-92-1	T	B2	1	1	4.10E-03	4.10E-03	1.50E-02	2.7E-01
OFF	P384/P386	INORG	Manganese	7439-96-5	T	D	1	1	3.10E+00	3.10E+00	8.80E-01	3.5E+00
OFF	P384/P386	INORG	Manganese	7439-96-5	D	D	1	1	3.10E+00	3.10E+00	8.80E-01	3.5E+00
OFF	P384/P386	INORG	Mercury	7439-97-6	T	D	1	1	4.40E-04	4.40E-04	2.00E-03	2.2E-01
OFF	P384/P386	INORG	Mercury	7439-97-6	D	D	1	1	3.40E-04	3.40E-04	2.00E-03	1.7E-01
OFF	P384/P386	INORG	Vanadium	7440-62-2	T		1	1	2.20E-03	2.20E-03	2.60E-01	8.5E-03

**Table 2-5: Spring Water Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P384/P386	INORG	Zinc	7440-66-6	T	D	1	1	1.00E-01	1.00E-01	1.10E+01	9.1E-03
OFF	P384/P386	INORG	Zinc	7440-66-6	D	D	1	1	1.30E-02	1.30E-02	1.10E+01	1.2E-03
Notes:												
Only constituents detected at each area are shown.												
Shaded cells represent ratios of conc to screening criteria greater than 1.												
The Screening Criteria hierarchy is State MCL, Fed MCL, the lower of the integrated Screening Criteria at:												
target cancer risk =				1E-05								
target hazard quotient =				1								
The Screening Criteria for Naphthalene were used as a surrogate for 2-Methylnaphthalene.												
The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).												
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).												
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.												
Chem Group - Chemical Group												
Meas Basis - Measured Basis; T = Total, D = Dissolved												
Carc Class - EPA Weight-of-Evidence Cancer Classification												

**Table 2-6: Residential Well Water Screening Results
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
216 Rawlins Mill Road	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
216 Rawlins Mill Road	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	2.43E-04	2.43E-04	5.00E-04	4.9E-01
228 Madison Street	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
228 Madison Street	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
412 Peerless Rd	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
412 Peerless Rd	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
612 E Street	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
612 E Street	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P013	P/PCB	PCBs (total)	1336-36-3	T	B2	2				5.00E-04	
P015	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P018	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P018	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P020/P296	P/PCB	PCBs (total)	1336-36-3	D	B2	2				5.00E-04	
P020/P296	P/PCB	PCBs (total)	1336-36-3	T	B2	2	1	1.85E-03	1.85E-03	5.00E-04	3.7E+00
P028	P/PCB	PCBs (total)	1336-36-3	D	B2	2				5.00E-04	
P028	P/PCB	PCBs (total)	1336-36-3	T	B2	2				5.00E-04	
P208	P/PCB	PCBs (total)	1336-36-3	T	B2	2	2	1.10E-03	1.25E-03	5.00E-04	2.5E+00
P209/P210	P/PCB	PCBs (total)	1336-36-3	D	B2	2				5.00E-04	
P209/P210	P/PCB	PCBs (total)	1336-36-3	T	B2	2				5.00E-04	
P211/P212	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P211/P212	P/PCB	PCBs (total)	1336-36-3	T	B2	2				5.00E-04	
P217	P/PCB	PCBs (total)	1336-36-3	T	B2	3				5.00E-04	
P292	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P292	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P295	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P295	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P368	P/PCB	PCBs (total)	1336-36-3	T	B2	2				5.00E-04	
P372	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P372	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P388	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P388	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	3.20E-04	3.20E-04	5.00E-04	6.4E-01
P390/392	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P390/392	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	2.03E-04	2.03E-04	5.00E-04	4.1E-01
P394	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P394	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P408	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P408	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	

Table 2-6: Residential Well Water Screening Results Bedford, Indiana											
Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
P412	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P412	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P413	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P413	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	3.05E-04	3.05E-04	5.00E-04	6.1E-01
P414	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P414	P/PCB	PCBs (total)	1336-36-3	T	B2	1	1	8.90E-04	8.90E-04	5.00E-04	1.8E+00
P415	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P415	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P416	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P416	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P423	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P423	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
P424	P/PCB	PCBs (total)	1336-36-3	D	B2	1				5.00E-04	
P424	P/PCB	PCBs (total)	1336-36-3	T	B2	1				5.00E-04	
Notes:											
Shaded cells represent ratios of conc to screening criteria greater than 1.											
The Screening Criteria hierarchy is State MCL, Fed MCL, the lower of the integrated Screening Criteria at:											
target cancer risk =		1E-05									
target hazard quotient =		1									
The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).											
Chem Group - Chemical Group											
Meas Basis - Measured Basis; T = Total (unfiltered), D = Dissolved (filtered)											
Carc Class - EPA Weight-of-Evidence Cancer Classification											

**Table 2-7: Other Liquid Matrices Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Matrix	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
ON	A001	INORG	Barium	7440-39-3	Liquid Emulsion	T	D	1	1	6.80E-01	6.80E-01	2.00E+00	3.4E-01
ON	A001	INORG	Barium	7440-39-3	Liquid Emulsion	D	D	1	1	6.90E-01	6.90E-01	2.00E+00	3.5E-01
ON	A001	INORG	Chromium (total)	7440-47-3	Liquid Emulsion	T		1	1	2.80E-03	2.80E-03	1.00E-01	2.8E-02
ON	A001	INORG	Cobalt	7440-48-4	Liquid Emulsion	T	B1	1	1	1.40E-03	1.40E-03	7.30E-01	1.9E-03
ON	A001	INORG	Cobalt	7440-48-4	Liquid Emulsion	D	B1	1	1	1.40E-03	1.40E-03	7.30E-01	1.9E-03
ON	A001	INORG	Iron	7439-89-6	Liquid Emulsion	T	D	1	1	2.80E+00	2.80E+00	1.10E+01	2.5E-01
ON	A001	INORG	Iron	7439-89-6	Liquid Emulsion	D	D	1	1	8.70E-02	8.70E-02	1.10E+01	7.9E-03
ON	A001	INORG	Manganese	7439-96-5	Liquid Emulsion	T	D	1	1	2.80E+00	2.80E+00	8.80E-01	3.2E+00
ON	A001	INORG	Manganese	7439-96-5	Liquid Emulsion	D	D	1	1	2.90E+00	2.90E+00	8.80E-01	3.3E+00
ON	A001	INORG	Nickel	7440-02-0	Liquid Emulsion	T	A	1	1	5.80E-03	5.80E-03	7.30E-01	7.9E-03
ON	A001	INORG	Nickel	7440-02-0	Liquid Emulsion	D	A	1	1	5.40E-03	5.40E-03	7.30E-01	7.4E-03
OFF	P207	VOC	Acetone	67-64-1	Light Non-aqueous phase liquid	T	ID	1	1	1.10E+00	1.10E+00	3.70E+00	3.0E-01
OFF	P207	VOC	2-Butanone	78-93-3	Light Non-aqueous phase liquid	T	ID	1	1	1.10E+00	1.10E+00	2.20E+01	5.0E-02
OFF	P207	VOC	Ethyl Benzene	100-41-4	Light Non-aqueous phase liquid	T	D	1	1	2.60E-03	2.60E-03	7.00E-01	3.7E-03
OFF	P207	VOC	Xylenes (total)	1330-20-7	Light Non-aqueous phase liquid	T	ID	1	1	1.70E-02	1.70E-02	1.00E+01	1.7E-03
OFF	P207	SVOC	Phenanthrene	85-01-8	Light Non-aqueous phase liquid	T	D	1	1	8.30E-02	8.30E-02	1.10E+00	7.5E-02
OFF	P207	P/PCB	PCBs (total)	1336-36-3	Light Non-aqueous phase liquid	T	B2	1	1	3.80E-03	3.80E-03	5.00E-04	7.6E+00
OFF	P207	INORG	Aluminum	7429-90-5	Light Non-aqueous phase liquid	T	D	1	1	2.70E+00	2.70E+00	3.70E+01	7.3E-02
OFF	P207	INORG	Barium	7440-39-3	Light Non-aqueous phase liquid	T	D	1	1	7.80E-02	7.80E-02	2.00E+00	3.9E-02
OFF	P207	INORG	Cadmium	7440-43-9	Light Non-aqueous phase liquid	T	B1	1	1	4.40E-03	4.40E-03	5.00E-03	8.8E-01
OFF	P207	INORG	Chromium (total)	7440-47-3	Light Non-aqueous phase liquid	T		1	1	5.30E-03	5.30E-03	1.00E-01	5.3E-02
OFF	P207	INORG	Cobalt	7440-48-4	Light Non-aqueous phase liquid	T	B1	1	1	3.30E-03	3.30E-03	7.30E-01	4.5E-03
OFF	P207	INORG	Copper	7440-50-8	Light Non-aqueous phase liquid	T	D	1	1	6.20E-02	6.20E-02	1.30E+00	4.8E-02
OFF	P207	INORG	Cyanide (total)	57-12-5	Light Non-aqueous phase liquid	T	D	1	1	6.10E-03	6.10E-03	2.00E-01	3.1E-02
OFF	P207	INORG	Iron	7439-89-6	Light Non-aqueous phase liquid	T	D	1	1	9.50E+00	9.50E+00	1.10E+01	8.6E-01
OFF	P207	INORG	Lead	7439-92-1	Light Non-aqueous phase liquid	T	B2	1	1	3.30E-02	3.30E-02	1.50E-02	2.2E+00
OFF	P207	INORG	Manganese	7439-96-5	Light Non-aqueous phase liquid	T	D	1	1	3.60E-01	3.60E-01	8.80E-01	4.1E-01
OFF	P207	INORG	Mercury	7439-97-6	Light Non-aqueous phase liquid	T	D	1	1	1.90E-04	1.90E-04	2.00E-03	9.5E-02
OFF	P207	INORG	Nickel	7440-02-0	Light Non-aqueous phase liquid	T	A	1	1	5.00E-03	5.00E-03	7.30E-01	6.8E-03
OFF	P207	INORG	Vanadium	7440-62-2	Light Non-aqueous phase liquid	T		1	1	4.80E-03	4.80E-03	2.60E-01	1.8E-02
OFF	P207	INORG	Zinc	7440-66-6	Light Non-aqueous phase liquid	T	D	1	1	4.00E-01	4.00E-01	1.10E+01	3.6E-02
OFF	P207	VOC	Acetone	67-64-1	Dense Non-aqueous phase liquid	T	ID	1	1	8.10E-01	8.10E-01	3.70E+00	2.2E-01
OFF	P207	VOC	2-Butanone	78-93-3	Dense Non-aqueous phase liquid	T	ID	1	1	8.30E-01	8.30E-01	2.20E+01	3.8E-02
OFF	P207	SVOC	Phenanthrene	85-01-8	Dense Non-aqueous phase liquid	T	D	1	1	2.30E-02	2.30E-02	1.10E+00	2.1E-02
OFF	P207	P/PCB	PCBs (total)	1336-36-3	Dense Non-aqueous phase liquid	T	B2	1	1	8.70E-04	8.70E-04	5.00E-04	1.7E+00
OFF	P207	INORG	Aluminum	7429-90-5	Dense Non-aqueous phase liquid	T	D	1	1	9.30E+01	9.30E+01	3.70E+01	2.5E+00
OFF	P207	INORG	Antimony	7440-36-0	Dense Non-aqueous phase liquid	T		1	1	3.50E-02	3.50E-02	6.00E-03	5.8E+00
OFF	P207	INORG	Arsenic	7440-38-2	Dense Non-aqueous phase liquid	T	A	1	1	1.40E-01	1.40E-01	5.00E-02	2.8E+00
OFF	P207	INORG	Barium	7440-39-3	Dense Non-aqueous phase liquid	T	D	1	1	1.10E+00	1.10E+00	2.00E+00	5.5E-01
OFF	P207	INORG	Beryllium	7440-41-7	Dense Non-aqueous phase liquid	T	B1	1	1	2.20E-03	2.20E-03	4.00E-03	5.5E-01

**Table 2-7: Other Liquid Matrices Screening Results
Bedford, Indiana**

On/Off-Site	Area	Chem Group	Chemical	CASRN	Matrix	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Drinking Water Criteria (MCL or TR=10 ⁻⁵ & HQ=1) (mg/L)	Ratio of Max Detect to Drinking Water Criteria
OFF	P207	INORG	Cadmium	7440-43-9	Dense Non-aqueous phase liquid	T	B1	1	1	1.50E-01	1.50E-01	5.00E-03	3.0E+01
OFF	P207	INORG	Chromium (total)	7440-47-3	Dense Non-aqueous phase liquid	T		1	1	2.00E-01	2.00E-01	1.00E-01	2.0E+00
OFF	P207	INORG	Cobalt	7440-48-4	Dense Non-aqueous phase liquid	T	B1	1	1	6.90E-02	6.90E-02	7.30E-01	9.5E-02
OFF	P207	INORG	Copper	7440-50-8	Dense Non-aqueous phase liquid	T	D	1	1	1.12E+01	1.12E+01	1.30E+00	8.6E+00
OFF	P207	INORG	Iron	7439-89-6	Dense Non-aqueous phase liquid	T	D	1	1	1.23E+03	1.23E+03	1.10E+01	1.1E+02
OFF	P207	INORG	Lead	7439-92-1	Dense Non-aqueous phase liquid	T	B2	1	1	4.50E+00	4.50E+00	1.50E-02	3.0E+02
OFF	P207	INORG	Manganese	7439-96-5	Dense Non-aqueous phase liquid	T	D	1	1	4.20E+00	4.20E+00	8.80E-01	4.8E+00
OFF	P207	INORG	Mercury	7439-97-6	Dense Non-aqueous phase liquid	T	D	1	1	7.70E-04	7.70E-04	2.00E-03	3.9E-01
OFF	P207	INORG	Nickel	7440-02-0	Dense Non-aqueous phase liquid	T	A	1	1	2.00E-01	2.00E-01	7.30E-01	2.7E-01
OFF	P207	INORG	Thallium	7440-28-0	Dense Non-aqueous phase liquid	T		1	1	5.20E-03	5.20E-03	2.00E-03	2.6E+00
OFF	P207	INORG	Vanadium	7440-62-2	Dense Non-aqueous phase liquid	T		1	1	1.90E-01	1.90E-01	2.60E-01	7.3E-01
OFF	P207	INORG	Zinc	7440-66-6	Dense Non-aqueous phase liquid	T	D	1	1	4.82E+01	4.82E+01	1.10E+01	4.4E+00
	Notes:												
	Only constituents detected at each area are shown.												
	Shaded cells represent ratios of conc to screening criteria greater than 1.												
	The Screening Criteria hierarchy is State MCL, Fed MCL, the lower of the integrated Screening Criteria at:												
		target cancer risk =	1E-05										
		target hazard quotient =	1										
	The Screening Criteria for Chromium VI was used as a surrogate for Chromium (total).												
	The concentrations for all PCB isomers were summed before comparing to Polychlorinated biphenyls (PCBs).												
	The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Criteria.												
	Chem Group - Chemical Group												
	Meas Basis - Measured Basis; T = Total, D = Dissolved												
	Carc Class - EPA Weight-of-Evidence Cancer Classification												

**Table 3-1: On-Site Areas Requiring Further Evaluation
GM Powertrain Bedford, Bedford, Indiana**

Area ¹	Sample Matrix ²							Area Information ³			
	Surface Soil	SubSurface Soil	Sediment	Groundwater	Spring Water	Surface Water	Liquid w/ non-aqueous phase	Area Under Pavement or Building?	Occupied Building?	Fencing or Restricted Access?	Groundwater less than 10 ft bgs or unspecified depth?
A001	N	N		Y		Y	Y	N/A	No	Yes	No
A004	Y	Y	Y	Y	Y	Y		No	No	Yes	No
A004a	Y		N		Y			No	No	Yes	N/A
A005	Y	Y						No	No	Yes	N/A
A006	Y	Y				Y		No	No	Yes	N/A
A007	N	N		Y				N/A	No	Yes	No
A008	N	Y		Y				N/A	Yes	Yes	No
A009	N	Y						N/A	Yes	Yes	N/A
A010			Y		Y	Y		N/A	No	Yes	N/A
A011	N	Y		Y				N/A	No	Yes	Yes
A015	Y	Y		N				No	No	Yes	N/A
A018	Y	N						Yes	No	Yes	N/A
A021	Y	Y		Y				No	Yes	Yes	No
A022	Y	N						No	No	Yes	N/A
Monitoring_Well				Y			Y	N/A	N/A	N/A	Yes
P201(GM)	N					Y		N/A	No	No	N/A
P205(GM)	Y			Y				No	No	Yes	Yes
P215(GM)	Y	N	Y			Y		No	No	Yes	N/A
P216(GM)	Y		Y	Y		Y		No	No	Yes	No
Plant_Boundary	Y	N		Y				No	No	Partial	No
Notes:											
1. Only on-site areas with at least one sample matrix that has constituent concentrations higher than screening criteria identified in Question 2 are shown.											
2. Y = At least one sample exceeded matrix specific screening criteria in the area.											
N = No samples exceeded matrix specific screening criteria in the area.											
Blank cells indicate no samples were collected for the matrix in the area.											
3. N/A = No constituent concentrations higher than screening criteria or not applicable.											

**Table 3-2: Off-Site Areas Requiring Further Evaluation
GM Powertrain Bedford, Bedford, Indiana**

Area ¹	Sample Matrix ²								Property Information ³	
	Surface Soil	SubSurface Soil	Sediment	Groundwater	Spring Water	Surface Water	Residential Well	Liquid w/ non-aqueous phase	Resident Occupied?	GM Owned?
P002	Y	Y	Y	N		N			Yes	Yes
P023	Y		Y			N			No	Yes (west portion)
P024	Y								Yes	No
P025	Y	Y	Y		N				No	No
P027	Y				Y	N			No	Yes
P028	Y	Y	Y		N		N		Yes	Yes (floodplain only)
P029	Y								No	No
P030	Y	N	Y						Yes	No
P031	N				N	Y			No	Yes
P036	Y		Y		N				Yes	No
P037/P237	Y	N	N			N			No	Yes
P038	Y					N			No	Yes
P039 ⁴	Y	N	Y		N	Y			Yes (east portion)	Yes (central & west portions)
P040	Y		Y		N	N			Yes	No
P047						Y			Yes	No
P057	Y		N			N			Yes	No
P060	N		Y			N			Yes	No
P061	N		Y			Y			Yes	No
P072	Y				N				Yes	No
P076(GM)	Y					N			No	Yes
P078	Y								No	Yes
P081	Y		N						Yes	No
P202/P203/P204	Y								No	Yes
P207	N							Y	Yes	No
P208	N						Y		Yes	No
P217	Y	Y					N		No	Yes
P364	Y								No	Yes
P384/P386	Y	Y	Y		Y	Y			No	Yes
P393	Y								No	Yes
P396	Y								Yes	No
P398	Y	Y							Yes	No
P400	Y					Y			No	No
P414	N						Y		No	Yes

Notes:

1. Only off-site areas with at least one sample matrix that has constituent concentrations higher than screening criteria identified in Question 2 are shown. Data from off-site fill areas (AOIs 25 through 29) are included in the evaluations of the off-site Parcels where the data are also assigned.

2. Y = At least one sample exceeded matrix specific screening criteria in the area.

N = No samples exceeded matrix specific screening criteria in the area.

Blank cells indicate no samples were collected for the matrix in the area.

3. The property information is based on the conditions at the time this report was prepared.

4. Soil concentrations higher than the screening criteria are present only in the central and western portions of Parcel 39.

**Table 4-1: High-End Cumulative Risk Estimates for Routine Worker
Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Routine Worker Cumulative Cancer Risk	Routine Worker HI
A004	2E-04	1E+01
A004a_south	4E-05	3E+00
A004a_west	4E-05	2E+00
A005	7E-04	4E+01
A006	2E-03	1E+02
A015	4E-05	3E+00
A021	2E-05	1E+00
A022	7E-06	2E+00
P205(GM)	1E-05	9E-01
P215_area	6E-05	4E+00
P216_east	2E-05	1E+00
P216_west	4E-05	3E+00
Plant_Boundary	4E-05	2E+00
Notes:		
1. Cumulative cancer risks greater than 10^{-4} and hazard indices greater than 1 are highlighted.		
2. Sampling locations in A004a, Parcel 215(GM), and Parcel 216(GM) were reassigned to new exposure areas (A004a_west, A004a_south, P215_area, P216_east, and P216_west) to match the logical exposure units based on physical features (e.g. fences or streams) in the areas.		
3. Risk estimates for AOI 15 and 22 are based on the highest constituent concentrations detected in each area because less than 8 samples are available.		
4. Plant Boundary includes locations: B-X261Y356, BK-X045Y258, MW-X033Y147S, MW-X045Y258D, MW-X178Y367D, MW-X234Y157D, MW-X261Y356D, and MW-X269Y201D. Risk estimates for Plant Boundary are based on the highest constituent concentrations detected because the sampling locations do not comprise a single exposure unit.		

Table 4-2: Surface Soil Locations Where Controls are Warranted for Routine Workers

GM Powertrain Bedford Facility, Bedford, Indiana

Area	Location	Top Depth (ft)	Bottom Depth (ft)	Chemical	Conc (mg/kg)	QL (mg/kg)
A004	AOI4-5000	0	0.33	PCBs (total)	4.13E+02	1.90E+00
A004	AOI4-5001	0	0.33	PCBs (total)	1.53E+02	1.80E+00
A004a_south	1288	0	0.33	PCBs (total)	1.18E+02	5.60E+00
A004a_south	2251	0	0.33	PCBs (total)	2.63E+02	2.30E+00
A004a_west	AOI4-5000	0	0.33	PCBs (total)	4.13E+02	1.90E+00
A004a_west	AOI4-5001	0	0.33	PCBs (total)	1.53E+02	1.80E+00
A005	B-X186Y180	0	2	PCBs (total)	2.50E+03	1.20E+02
A005	B-X200Y161	0	2	PCBs (total)	5.62E+02	2.41E+01
A006	B-X173Y131	0	2	PCBs (total)	1.57E+03	1.10E+02
A006	B-X204Y132	0	2	PCBs (total)	1.38E+03	4.90E+01
A006	TP-30	1	3	PCBs (total)	8.06E+03	2.90E+02
A015	B-X148Y233	0	2	PCBs (total)	3.04E+01	1.26E+00
A015	MW-X143Y245D	0	2	PCBs (total)	3.76E+01	2.35E+00
A022	SS-X031Y124	0	2	Antimony	1.41E+03	2.80E+00
P215_area	2062	0	0.33	PCBs (total)	2.34E+02	1.65E+01
P215_area	2062	0.33	1	PCBs (total)	7.70E+01	5.30E+00
P215_area	2062	1	1.5	PCBs (total)	3.89E+02	2.90E+01
P215_area	2062	1.5	2	PCBs (total)	2.39E+02	2.90E+01
P215_area	2063	0	0.33	PCBs (total)	1.62E+02	6.10E+00
P215_area	215(GM)-1271	0	0.33	PCBs (total)	2.76E+02	2.80E+01
P215_area	215(GM)-1277	0	0.33	PCBs (total)	1.93E+02	1.45E+01
P216_west	634	0	0.33	PCBs (total)	1.48E+02	3.70E+00
P216_west	634	0.33	2	PCBs (total)	2.33E+02	5.40E+00
P216_west	2256	0	0.33	PCBs (total)	3.13E+02	5.00E+00
P216_west	2263	0	0.33	PCBs (total)	1.46E+02	2.40E+00
P216_west	2287	0	0.33	PCBs (total)	9.12E+01	9.50E-01
Plant_Boundary	MW-X045Y258D	0	2	PCBs (total)	3.13E+01	1.32E+00

**Table 4-3: Cumulative Risk Estimates for Routine Worker Exposure to Surface Soil with Controls in Place at Certain Locations
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Routine Worker Cumulative Cancer Risk	Routine Worker HI
A004	8E-07	1E-01
A004a_south	2E-05	1E+00
A004a_west	2E-05	1E+00
A005	8E-06	5E-01
A006	1E-05	6E-01
A015	8E-06	5E-01
A022	7E-06	4E-02
P215_area	2E-05	1E+00
P216_west	2E-05	1E+00
Plant_Boundary	2E-05	1E+00
Notes:		
1. The risk estimates are based on maximum detected concentrations with controls in place at the locations identified in Table 4-2 except for A004, A005, A006, A004a_south, A004a_west, P215_area and P216_west where the PCBs (total) concentration is the 95% UCL.		

**Table 4-4: Upper-Bound Cumulative Risk Estimates for Construction
Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
A004	1E-05	1E+00
A004a_south	5E-06	8E-01
A004a_west	7E-06	1E+00
A005	2E-04	3E+01
A006	3E-04	6E+01
A008	3E-07	1E-01
A009	7E-05	1E+01
A011	2E-05	2E+00
A015	1E-06	1E-01
A018	1E-06	1E-01
A021	2E-06	3E-01
A022	2E-07	1E-01
P205(GM)	1E-06	2E-01
P215_area	7E-06	1E+00
P216_east	3E-06	5E-01
P216_west	6E-06	9E-01
Plant_Boundary	7E-07	1E-01
Notes:		
1. Cumulative cancer risks greater than 10 ⁻⁴ and hazard indices greater than 1 are highlighted.		
2. Sampling locations in A004a, Parcel 215(GM), and Parcel 216(GM) were reassigned to new exposure areas (A004a_west, A004a_south, P215_area, P216_east, and P216_west) to match the logical exposure units based on physical features (e.g. fences or streams) in the areas.		
3. Plant Boundary includes locations: B-X261Y356, BK-X045Y258, MW-X033Y147S, MW-X045Y258D, MW-X178Y367D, MW-X234Y157D, MW-X261Y356D, and MW-X269Y201D.		

Table 4-5: High-End Cumulative Risk Estimates for Construction Worker Exposure to Soil at the Facility GM Powertrain Bedford Facility, Bedford, Indiana		
Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
A005	6E-05	1E+01
A006	2E-04	2E+01
A009	7E-05	1E+01
A011	6E-06	5E-01
Note:		
The 95% UCL for PCBs at A011 includes all locations from A011 as well as locations B-X193Y098, B-X209Y078A through C, and TMW-X225Y080 from adjacent areas.		

Table 4-6: Soil Locations Where Precautions are Warranted for On-Site Construction Workers GM Powertrain Bedford Facility, Bedford, Indiana						
Area	Location	Top Depth (ft)	Bottom Depth (ft)	Chemical	Conc (mg/kg)	QL (mg/kg)
A005	B-X186Y180	0	2	PCBs (total)	2.50E+03	1.20E+02
A005	B-X186Y180	6	8	PCBs (total)	9.68E+03	6.40E+02
A006	B-X218Y141	0	2	PCBs (total)	2.49E+00	2.40E-01
A006	B-X218Y141	6	8	PCBs (total)	5.52E+03	2.50E+02
A006	B-X218Y141	8	10	PCBs (total)	1.94E+04	2.50E+03
A006	TP-30	1	3	PCBs (total)	8.06E+03	2.90E+02
A009	B-X106Y102B	2	4	PCBs (total)	3.69E+03	2.40E+02

**Table 4-7: Cumulative Risk Estimates for Construction Worker
Exposure to Soil with Precautions at Certain Locations at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
A005	3E-06	5E-01
A006	5E-06	7E-01
A009	2E-06	3E-01
Note: The risk estimates are based on 95% UCL concentrations for PCBs (total) and maximum detected concentrations for the other chemicals with controls in place at the locations identified in Table 4-6.		

**Table 4-8: Upper-Bound Cumulative Risk Estimates
for Construction Worker Exposure to On-Site Groundwater
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Wellzone	Construction Worker Cumulative Cancer Risk	Construction Worker HI
A011	Shallow_Bedrock	5E-07	8E-02
Monitoring_Well	Overburden	4E-09	1E-03
Monitoring_Well	Shallow_Bedrock	4E-07	6E-02
P205(GM)	Shallow_Bedrock	3E-09	5E-03
Note:			
Monitoring_Well includes data from wells MW-X033Y147D-1, MW-X033Y147D-2, MW-X033Y147D-3, MW-X033Y147D-4, MW-X045Y258D-2, MW-X178Y367D-2, MW-X178Y367D-3, MW-X234Y157D-1, MW-X234Y157D-2, MW-X234Y157D-3, MW-X234Y157D-4, MW-X234Y157S, MW-X269Y201D-1, MW-X269Y201D-2, MW-X269Y201D-3, and MW-X033Y147S and wells that are located within A001, A015, A021, and Plant_Boundary.			

Table 4-9: Upper-Bound Cumulative Risk Estimates for Construction Worker Exposure to On-Site Spring Water GM Powertrain Bedford Facility, Bedford, Indiana		
Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
A004	3E-06	5E-01
A004a	3E-06	5E-01
A010	3E-06	5E-01
Note: Source control has been implemented at Eastern_Seep_Area_01 (SW-X243Y232) and Eastern_Seep_Area_02; data from these locations are not included in the risk estimates for A010.		

**Table 4-10: Upper-Bound Cumulative Risk Estimates
for Trespasser Exposure at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

		Surface Water		Surface Soil	
Area	Matrix	Trespasser Cumulative Cancer Risk	Trespasser HI	Trespasser Cumulative Cancer Risk	Trespasser HI
P201(GM)	Surface Water	2E-06	4E-01	NA	NA
Plant_Boundary	Soil	NA	NA	4E-07	5E-02
Note:					
Only complete pathways for trespassers at the Facility are shown.					

**Table 4-11: Cumulative Risk Estimates for Hypothetical
Residential Exposure to Soil
Bedford, Indiana**

Area	Residential Cumulative Cancer Risk	Residential HI
P002	2E-06	1E-01
P024	1E-05	8E-01
P028	1E-05	8E-01
P030	2E-05	1E+00
P036	2E-05	1E+00
P040	6E-07	3E-02
P057	1E-06	8E-02
P072	4E-07	2E-02
P081	2E-06	9E-02
P396	6E-06	3E-01
P398	8E-08	4E-03
Note:		
The estimates are calculated using maximum detects, except for PCBs the area-weighted concentrations are used.		

**Table 4-12: Cumulative Risk Estimates for
Trespasser Exposure to Soil at Unoccupied Properties
Bedford, Indiana**

Area	Trespasser Cumulative Cancer Risk	Trespasser HI
P023	2E-07	2E-02
P025	1E-06	1E-01
P027	2E-09	3E-04
P029	7E-09	9E-04
P037/P237	1E-08	1E-03
P038	3E-07	4E-02
P039_central	1E-07	1E-02
P039_west	5E-09	6E-04
P076(GM)	5E-08	7E-03
P078	3E-08	4E-03
P202/P203/P204	4E-08	5E-03
P217	4E-10	5E-05
P364	2E-08	2E-03
P384/P386	5E-08	7E-03
P393	1E-09	2E-04
P400	1E-08	2E-03

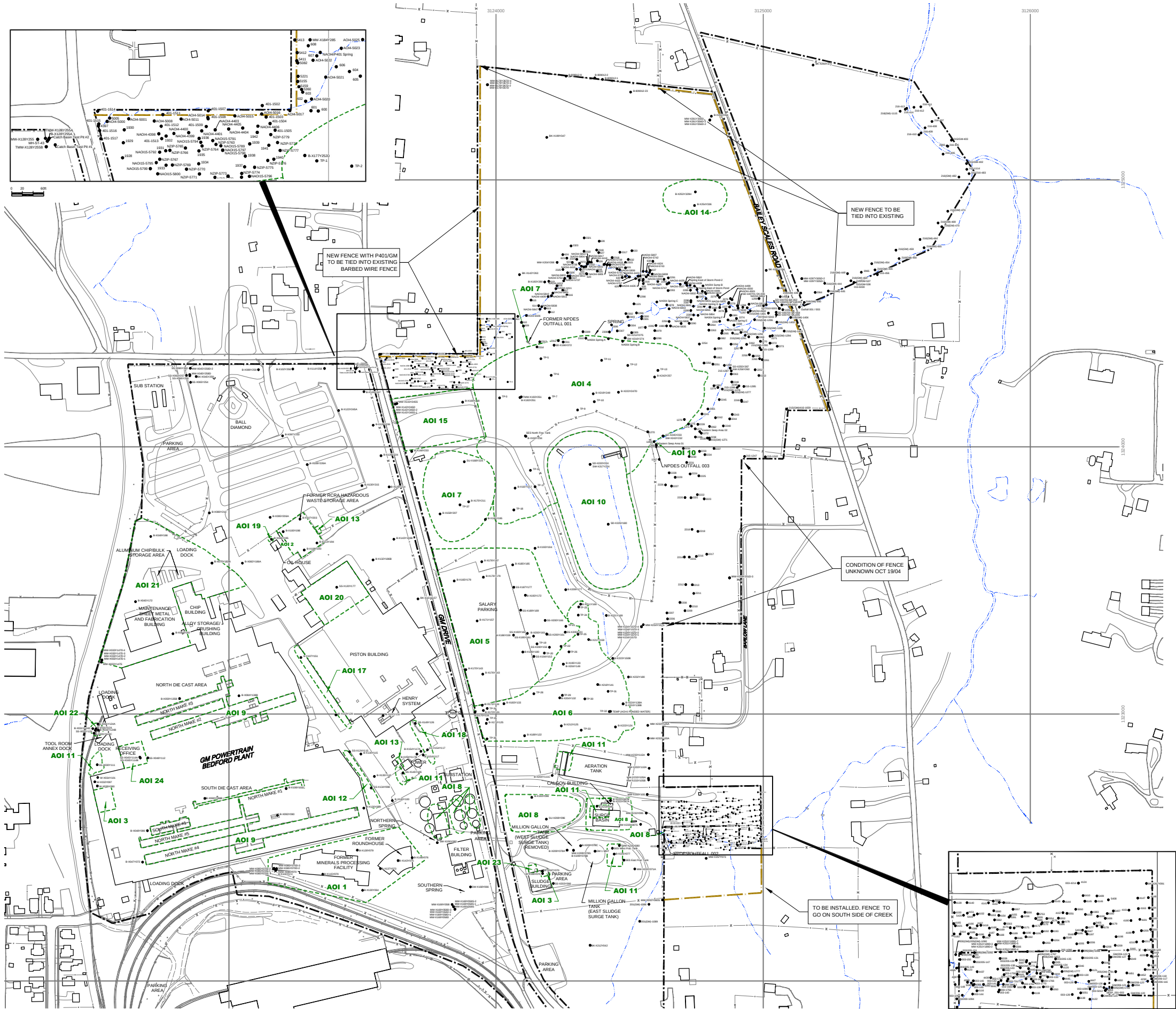
Table 4-13: Upper-Bound Cumulative Risk Estimates for Trespasser Exposure to Spring Water at Unoccupied Properties Bedford, Indiana		
Area	Trespasser Cumulative Cancer Risk	Trespasser HI
P027	4E-06	7E-01
P384/P386	2E-06	4E-01

Table 4-14: Upper-Bound Cumulative Risk Estimates for Trespasser Exposure to Stream Sediment, Surface Water, and Bank Soil Bedford, Indiana						
	Bank Soil		Sediment		Surface Water	
Area	Cancer Risk	HI	Cancer Risk	HI	Cancer Risk	HI
WS10-12	2E-06	3E-01	7E-08	8E-03	2E-06	4E-01
Note: WS10-12 represents the area within a half mile of warning signs (WS) 10 to 12 and 30 feet from the stream, including the area between the northern and southern branches.						

Table 4-15: Upper-Bound Cumulative Risk Estimates for Construction Worker Exposure to Off-Site Soil Bedford, Indiana		
Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
P002	1E-06	2E-01
P023	1E-06	2E-01
P024	2E-06	3E-01
P025	7E-06	1E+00
P027	2E-06	3E-01
P028	4E-06	6E-01
P029	2E-07	3E-02
P030	3E-06	5E-01
P036	1E-06	2E-01
P037/P237	1E-06	2E-01
P038	9E-06	1E+00
P039_central	6E-06	1E+00
P039_west	3E-07	4E-02
P040	2E-07	4E-02
P057	5E-08	7E-03
P072	8E-08	1E-02
P076(GM)	1E-06	2E-01
P078	2E-06	3E-01
P081	4E-08	6E-03
P202/P203/P204	8E-08	1E-02
P217	4E-06	3E-01
P364	2E-07	4E-02
P384/P386	9E-07	1E-01
P393	9E-08	2E-02
P396	1E-07	2E-02
P398	4E-07	5E-02
P400	6E-08	1E-02

Table 4-16: Upper-Bound Cumulative Risk Estimates for Construction Worker Exposure to Off-Site Spring Water Bedford, Indiana		
Area	Construction Worker Cumulative Cancer Risk	Construction Worker HI
P027	8E-07	1E-01
P384/P386	4E-07	7E-02

F I G U R E S



Revision

Date

Initial

0 40 120

1200

LEGEND

EXISTING BUILDINGS

AOI BOUNDARY

APPROXIMATE GM PROPERTY BOUNDARY

STREAMS

FENCE LINE

RAILROAD TRACKS

DIRT ROADS

ROADS / PAVED AREAS

NEW FENCE

B-132Y1888 SAMPLE LOCATION

AOI SUMMARY

AOI ID Description

AOI 1 Former Railroad Operations and Minerals Processing Facility

AOI 2 Waste Storage Area

AOI 3 PCB Storage Areas

AOI 4 Former North Disposal Area

AOI 5 Former East Sand Disposal Area

AOI 6 Former Sludge Disposal and Fire Training Area

AOI 7 Former North Lagoon and Outfall 001

AOI 8 Former South Lagoons and Outfall 002

AOI 9 Service Tunnels

AOI 10 Existing Stormwater Lagoon and Outfall 003

AOI 11 Aboveground Storage Tanks

AOI 12 Area Affected by the Reclaimed Hydraulic Fluid Release

AOI 13 Underground Storage Tanks

AOI 14 McBride Cows Disposal Area

AOI 15 Former Equipment Storage Area

AOI 17 Piston Building Oil Accumulations

AOI 18 Area Affected by the Henry System Discharge

AOI 19 Area Affected by Paint and Thinner Spill

AOI 20 Northern Portion of the Piston Building

AOI 21 Filled Ravine North of Die Cast Building

AOI 22 Tool Room Annex Dock Release

AOI 23 Area Affected by the 1996 Wastewater Treatment Filter Cake Release

AOI 24 Area Affected by the June 2000 Die Lube 5150 Release

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Author

Checker

Engineer

Scale

Date

Yield

GM POWERTRAIN BEDFORD PLANT
BEDFORD, INDIANA

RFI INVESTIGATION

SITE PLAN, SAMPLE, AND
AOI LOCATIONS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference

BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001

Project Manager

Reviewed By

Date

Scale

Project No.

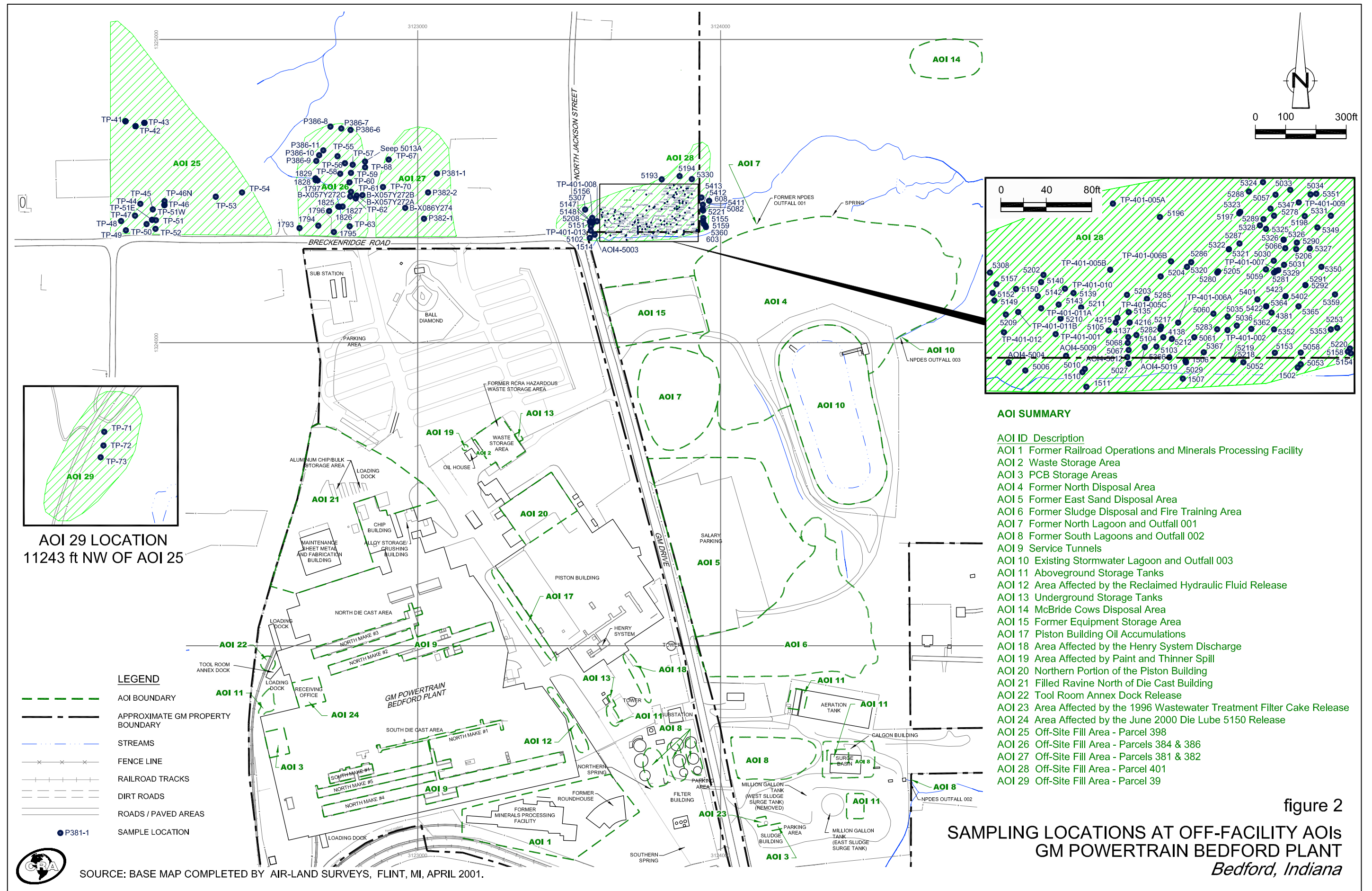
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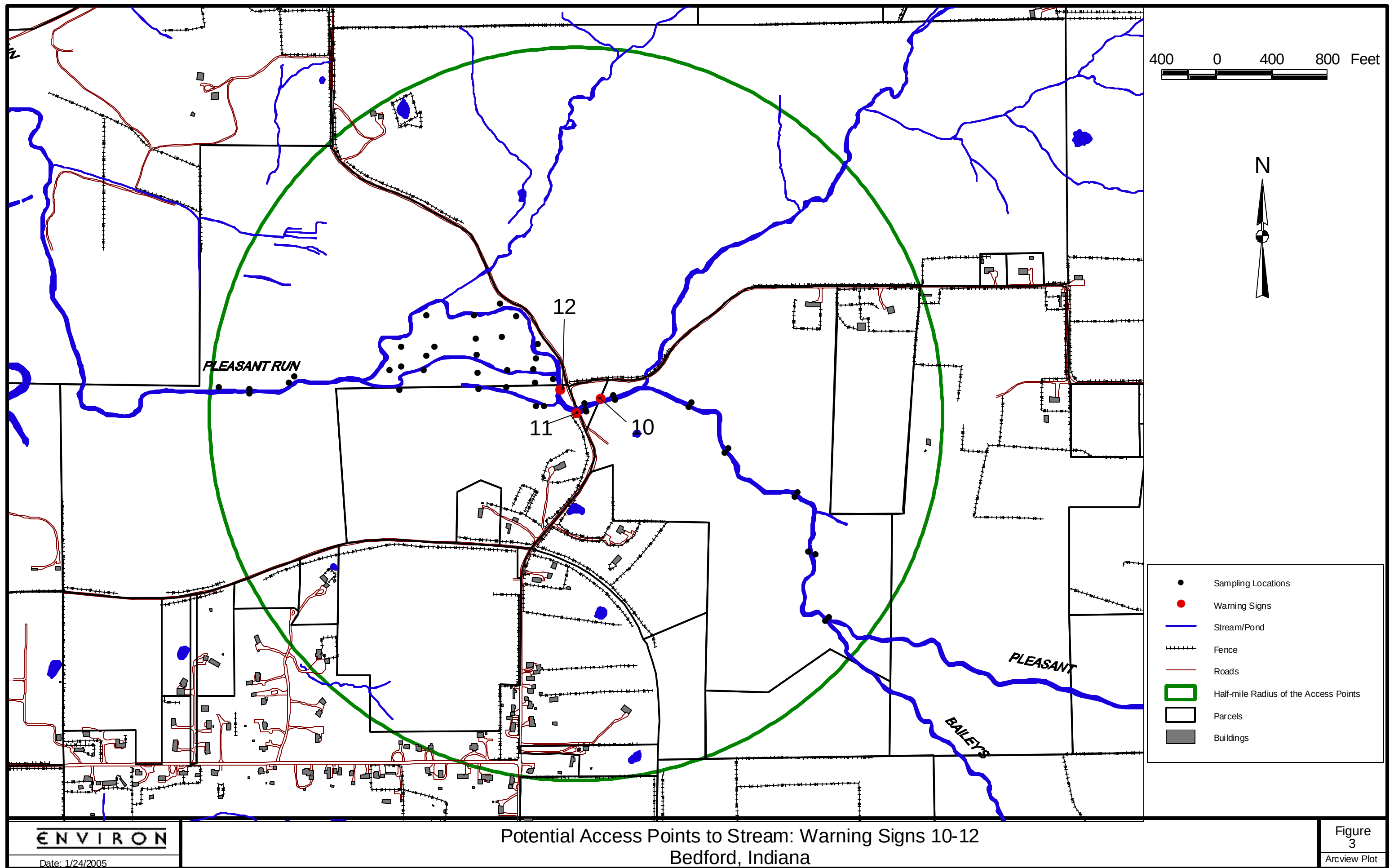
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figure 1





A P P E N D I X A

CA725 Form

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: General Motors Powertrain Bedford Facility
Facility Address: 105 GM Drive, Bedford, Indiana
Facility EPA ID #: IND 006 036 099

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.
 If no - re-evaluate existing data, or
 If data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “contaminated”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			<i>PCBs (Table 2-2)</i>
Air (indoors) ²		X		
Surface Soil (e.g., <2 ft)	X			<i>PCBs (Table 2-1a and 2-1c)</i>
Surface Water	X			<i>PCBs (Table 2-4)</i>
Sediment	X			<i>PCBs (Table 2-3a and 2-3b)</i>
Subsurf. Soil (e.g., >2 ft)	X			<i>PCBs (Table 2-1b and 2-1d)</i>
Air (outdoors)		X		

_____ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded

 X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

[See the following page]

Footnotes:

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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Environmental Indicator (EI) RCRIS code (CA725)
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Concentrations that are higher than appropriately protective risk-based levels in each medium are identified based on comparison of the RFI site characterization data with conservatively protective risk-based screening criteria. The data used in the comparison do not include soil, sediment, surface water, and spring water data from areas where removal action has been completed or is being conducted at the time this determination was prepared. They also do not include soil data being collected at AOI 21 per RFI Work Plan Addendum No. 7 (fencing is in place to prevent worker and trespasser contact with soil in this area while the field investigation is ongoing). The screening criteria and the results of the comparison by medium are presented in Tables 2-1 to 2-7 of the attached CA725 Report.

The screening criteria for soil and sediment are derived from USEPA Region 9 PRGs (2002) using a target cancer risk of 10^{-5} and target HQ of 1. The screening criteria for industrial and residential soil are used to evaluate on-site and off-site data, respectively. The residential soil screening criterion for PCBs is 2 mg/kg, which is the site-specific risk-based soil cleanup level as discussed in the Removal Action Work Plans. The screening criteria for all liquid matrices are MCLs or equivalent drinking water limits using USEPA's standard default exposure factors (i.e., 2 L/day, 350 days/year, 30 years, and 70 kg body weight) for chemicals without MCLs. The liquid matrices that were sampled during the RFI include groundwater, surface water, spring water, and residential well water. It should be noted that there is no known active drinking water well at the Facility or at any residences within the half-mile radius area covered in the water-well survey around the Facility.

As shown in Tables 2-1 to 2-7, some constituents (predominantly PCBs) have concentrations in soil, groundwater, sediment, surface water, spring water, and water from inactive residential wells at some locations that are higher than screening criteria and warrant further evaluation. A few liquid samples (which include a non-aqueous phase) also have constituent concentrations higher than drinking water screening criteria. The existence of exposure pathways to environmental media at these locations is evaluated further in Question 3.

In addition to the abovementioned matrices, data were also collected from concrete and rocks, and animal and plant tissues during the RFI. These samples were analyzed for PCBs. The PCB concentrations in these samples were either non-detect or below applicable regulatory standards or criteria (e.g., EPA TSCA and FDA tolerance limits). Ambient air quality monitoring data have been collected from the perimeter of the removal action work areas to evaluate the potential for downwind exposure to fugitive air emissions from the work areas. The air monitoring data include total suspended particulates and PCBs. These data were evaluated in accordance with the provisions of the air monitoring plan specified in the Removal Action Work Plans to determine if modifications to work procedures are necessary. Ambient air samples were not collected as part of the RFI site characterization effort because potential exposures via inhalation of soil vapors and particulates in ambient air are expected to be insignificant. As shown in the risk calculations provided in Appendix B, risk estimates for inhalation exposures to PCBs (the predominant constituents found during the RFI) are always insignificant relative to those for soil ingestion and dermal contact exposures. For example, the risk estimates for the inhalation pathway for PCBs account for approximately 10% of the total risk estimate for routine workers and less than 5% of the total risk estimate for residents.

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

“Contaminated” Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	<u>No</u>	<u>No</u>	<u>No</u>	<u>No*</u>			<u>No</u>
Air (indoors)	<u>--</u>	<u>--</u>	<u>--</u>				
Soil (surface, e.g., <2 ft)	<u>No*</u>	<u>Yes</u>	<u>No</u>	<u>Yes†</u>	<u>Yes†</u>	<u>No</u>	<u>No</u>
Surface Water	<u>No*</u>	<u>No</u>			<u>Yes</u>	<u>No</u>	<u>No</u>
Sediment	<u>No*</u>	<u>No</u>			<u>Yes†</u>	<u>No</u>	<u>No</u>
Soil (subsurface e.g., >2 ft)				<u>Yes†</u>			<u>No</u>
Air (outdoors)	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>		

**The exposure is not reasonably expected under the current conditions (see the discussion below); however, the significance of hypothetical exposures is discussed in Question 4.*

†The exposure is reasonably expected only off-site.

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. Enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“___”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

X If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code..

Rationale and Reference(s):

[See the following page]

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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The scenarios for potential exposures of human receptors at and around the Facility to media identified in Question 2 under current conditions are summarized in the above table and discussed below.

On-Facility

Routine workers have the potential to contact surface soil in unpaved areas and via vapor intrusion inside buildings at the facility. Table 3-1 identifies the areas that currently have unpaved areas or have occupied buildings. Exposures of routine workers to surface soil is possible at the unpaved areas that are identified as having constituent concentrations higher than the screening criteria in Question 2. Groundwater is not used as a potable or nonpotable water supply at the Facility. No volatile constituents with concentrations higher than screening criteria are present in soil or groundwater at areas with occupied buildings. The significance of potential exposures of routine workers to surface soil at unpaved areas is evaluated in Question 4.

Although there is no potential for significant exposures of construction workers to soil or groundwater because the facility's health and safety protocols cover all current on-site work, the significance of such hypothetical exposures to soil, groundwater, and spring water with constituent concentrations higher than the screening criteria is considered in Question 4 to provide early identification of locations at the Facility where corrective measures may be warranted.

Fencing and security personnel control access to most portions of the Facility, so that trespassing is unlikely, and if to occur, would be possible only at limited locations and for short periods. Table 3-1 shows that all the areas identified in Question 2 are within the Facility's fencing and not accessible to the public, except Parcel 201(GM) and Plant Boundary (near the baseball field) where a PCB concentration in surface water and surface soil is higher than the screening criterion, respectively. The significance of potential exposures of trespassers to surface water and surface soil at these two areas is evaluated in Question 4.

Off-Facility

Table 3-2 of the CA725 Report identifies which parcels are currently occupied by residents, and which are owned by GM. Exposure of residents in the occupied parcels to media with constituent concentrations that are higher than screening criteria is highly unlikely because: 1) they have been informed of the investigation results and advised to avoid these portions of their properties until the removal action is completed; 2) the areas with constituent concentrations higher than screening criteria are generally remote from the residences; and 3) access to these areas is generally difficult due to rough terrain and/or heavy vegetation. However, the significance of hypothetical exposures if residents were to unintentionally contact surface soil in these areas on occasions is discussed in Section 4.

There is no active drinking water well within a half-mile radius around the Facility. The liquid samples that include a non-aqueous phase and have constituent concentrations higher than screening criteria were collected from a residential well that is inoperable. Therefore, residents are not currently exposed via well water with PCB concentrations higher than the screening criterion.

Trespassers could come into contact with soil, sediment, surface water, and spring water along certain sections of Bailey's Branch, Pleasant Run, and the northern and western tributaries where removal action has not yet been completed. However, routine trespasser contact with these areas is unlikely because the general public in and around the City of Bedford has been informed of the investigation results and advised to avoid these areas. Warning signs also have been posted and maintained at potentially accessible points to the streams. If trespassing into these areas were to occur despite the warnings, it could occur via the parcels bordering these areas that are not currently occupied by residents (see Table 3-2 of the CA725 Report), or via access points to the stream where Warning Signs 10, 11, and 12 are posted (see Figure 3 of the CA725 Report). The significance of potential exposures of trespassers to soil and spring water at unoccupied parcels and to stream bank soil, sediment, and surface water at the stream near Warning Signs 10 to 12 is evaluated in Question 4.

Current Human Exposures Under Control
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Potential exposure of construction workers to surface/subsurface soil and spring water with constituent concentrations higher than the screening criteria is possible. Their activities in the areas with constituent concentrations higher than screening criteria are expected to be of limited duration (e.g., installation or repair of utilities). The significance of potential exposures of construction workers to off-site soil and spring water is evaluated in Question 4.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be “**significant**”⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

- X** If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

[See the following page]

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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The significance of the potential exposures identified in Question 3 is evaluated by estimating cumulative cancer and noncancer risks for each receptor and comparing the risk estimates to the USEPA-established levels for determining whether corrective measures are warranted under RCRA corrective action. Under USEPA policy, corrective measures are not warranted when the site-related cumulative cancer risk does not exceed 10^{-4} and the noncancer hazard index (HI) does not exceed 1. For lead, USEPA evaluates the significance of exposures using blood lead level as an index of exposure, rather than cancer risks or noncancer HQs. Therefore, the significance of potential exposure to lead is discussed separately in the CA725 Report. The cancer and noncancer risk calculations, and lead exposure calculations for the receptors discussed below are provided in Appendix B of the CA725 Report.

On-Facility

Routine Workers

As shown in Table 4-1 of the CA725 Report, the high-end risk estimates do not exceed USEPA's cancer risk and HI limits for AOI 21, P205(GM), and P216_east; but they do exceed the limits for AOIs 4, 4a_south, and 4a_west, 5, 6, 15, 22, P215_area, P216_west, and the Plant Boundary. Among the latter group of areas, PCBs contributed the most significantly to the risk estimates, except at AOI 22 where antimony contributed the most significantly. To address the potential for significant current exposures at the areas with high-end risk estimates that exceed the USEPA limits, additional risk calculations were performed to identify the locations where controls to restrict worker contact with surface soil would be prudent. The identified locations are listed on Table 4-2 of the CA725 Report. These locations have been fenced and/or gated, and plant security or remediation personnel are stationed at some locations during certain times to control access. To further enhance access control, signs have been posted to direct persons seeking access to plant security, and procedures for approving work in these areas have been incorporated into the Plant's ISO 14001 certified Environmental Management System (see Appendix C of the CA725 Report). To verify that controls at these locations would be adequate, risk calculations were repeated without using data from these locations. Table 4-3 of the CA725 Report shows that these calculations give cumulative cancer and noncancer risk estimates that do not exceed the USEPA-established limits.

Construction Workers

As discussed in Question 3, the significance of hypothetical exposures of construction workers is evaluated to provide early identification of locations at the Facility where subsurface conditions within the reasonably expected maximum excavation depth of 10 feet may eventually warrant corrective measures, even though the Facility's health and safety protocols ensure that no significant exposure would occur during subsurface construction and maintenance activities currently.

As shown in Table 4-4 of the CA725 Report, the upper-bound risk estimates for hypothetical exposures of construction workers to soil are within USEPA's acceptable cancer and noncancer risk limits at all of the areas identified in Question 3 except AOIs 5, 6, 9, and 11. For these exceptions, high-end estimates of cumulative cancer and noncancer risks were calculated. As shown in Table 4-5 of the CA725 Report, the high-end cancer risk and/or HI estimates are within USEPA's acceptable cancer and noncancer risk limits for AOI 11 but still higher than USEPA's limits for AOIs 5, 6, and 9. For these AOIs, additional risk calculations were then performed for these AOIs to identify the locations where special attention to proper procedures for subsurface construction activities is warranted. The identified locations are listed on Table 4-6 of the CA725 Report. Procedures for approving any subsurface construction activities in these areas to ensure that special attention is given to proper procedures for subsurface construction activities in these areas have been incorporated into the Plant's ISO 14001 certified Environmental Management System (see Appendix C of the CA725 Report). To verify that these are the only locations that warrant special attention, risk calculations were repeated without using data from these locations. Table 4-7 of the CA725 Report shows that these calculations give cumulative cancer and noncancer risk estimates that do not exceed the USEPA-established limits.

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Upper-bound estimates of cumulative cancer risk and HI for exposures of construction workers to shallow groundwater and spring water were conservatively calculated using the highest concentrations detected in groundwater within 10 ft of ground surface and spring water at each area identified in Question 3. As shown in Tables 4-8 and 4-9 of the CA725 Report, these upper-bound risk estimates are within USEPA's acceptable cancer and noncancer risk limits at all the areas. Therefore, the hypothetical exposure of construction workers to shallow groundwater and spring water at the Facility, even in the absence of specific health and safety protocols, is insignificant.

Trespassers

As discussed in Question 3, the only complete pathway at the Facility for trespassers is contact with surface water at Parcel 201(GM) and contact with surface soil at the Plant Boundary (near the baseball field). The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to surface water and surface soil were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespasser to surface water at this location (see Appendix B of the CA725 Report). As shown in Table 4-10 of the CA725 Report, the estimates of cumulative cancer and noncancer risks for these exposure scenarios do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers at the Facility is insignificant.

Off-Facility

Residents

As discussed in Question 3, an evaluation was conducted to assess the possibility of significant exposures if residents were to unintentionally contact soil with constituent concentrations higher than screening criteria at their properties on occasion, even though they are generally heeding advice to avoid these areas. In conducting this evaluation, risk estimates known to overstate significantly the risks associated with reasonable maximum exposures were calculated first. These calculations used USEPA standard default exposure factors and assumed that residents have equal chance of contact with surface soil at all points on their properties, even though they are actually spending little if any time in areas to be avoided. The risk estimates for these hypothetical exposures are then interpreted considering that residents actually have a much lower chance of contact with surface soil with constituent concentrations higher than screening criteria.

The risk estimates for the hypothetical exposures in the first case were calculated using area-weighted concentrations for PCBs and the highest concentrations for other constituents (if available), and are shown in Table 4-11 of the CA725 Report. These cumulative cancer risk and HI estimates do not exceed the USEPA limits, although some HI estimates are at or near the limit of 1. These results should not be interpreted to mean that exposures at the properties with HI estimates of 1 (or near 1) are nearly unacceptable. Rather, these results show that residents could unintentionally enter areas of their property that contain soil with constituent concentrations higher than screening criteria at unreasonably high frequencies without having a significant exposure.

As discussed above, the assumption that residents have equal chance of contact with all points on their properties is not realistic. The effects of using more realistic assumptions to account for the much lower likelihood of residents contacting areas that have soil with constituent concentrations higher than screening criteria can be demonstrated by using a time-weighted approach in combination with the area-weighted approach. As discussed in the CA725 Report, if one were to assume that residents are half as likely to enter areas that have soil with PCB concentrations higher than screening criteria as the other areas at the properties where PCBs contribute the most significantly to the HI estimate, it can be shown that the exposure concentrations for PCBs based on this assumption would be approximately half of those used in calculating the risk estimates shown on Table 4-11 of the CA725 Report. More realistically, residents might be no more than one-tenth as likely to enter these areas of their property, which means that more realistic exposure concentrations for PCBs would be no more than approximately one-tenth of those used in calculating the risk estimates on Table 4-11 of the CA725 Report. Therefore, it can be seen that the possible exposure of residents from unintentional contact with areas of their properties that have soil with constituent concentrations higher than screening criteria is insignificant.

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Trespassers

The cumulative cancer and noncancer risk estimates for the potential exposure of trespassers to surface soil at properties that are not occupied by residents were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespassers to surface soil (see Appendix B of the CA725 Report), and using the area-weighted concentrations for PCBs and the highest concentrations for other constituents. As shown in Table 4-12 of the CA725 Report, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers to soil at the unoccupied properties is insignificant.

The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to spring water at unoccupied residential properties were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespassers to spring water, as discussed in Appendix B of the CA725 Report. As shown in Table 4-13 of the CA725 Report, the estimates of cumulative cancer and noncancer risks for this exposure scenario do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers to spring water at the unoccupied properties is insignificant.

The cumulative cancer and noncancer risk estimates for the potential exposure of trespasser to sediment, surface water, and stream bank soil in stream segments that are accessible were calculated using site-specific exposure factors that are intended to estimate the reasonable maximum exposure of trespasser to these media, as discussed in Appendix B of the CA725 Report. Trespassers are assumed to be exposed to the highest concentrations found in sediment, surface water, and soil within a ½-mile radius of the access point at Warning Signs 10 to 12 and within 30 feet of the stream center (including the area within the northern and southern branches). As shown in Table 4-14 of the CA725 Report, the estimates of cumulative cancer and noncancer risks for these exposures do not exceed the USEPA-established limits. Therefore, the potential for current exposure of trespassers to stream bank soil, sediment, or surface water along these stream segments is insignificant.

Construction Workers

The significance of potential exposures of construction workers to off-site soil (0 to 10 ft bgs) and spring water during excavations was evaluated in the same way as exposures of construction workers on-site. As shown in Tables 4-15 and 4-16 of the CA725 Report, the upper-bound estimates of cumulative cancer and noncancer risks for these exposures do not exceed the USEPA limits. Therefore, the potential for current exposure of construction workers to off-site soil and spring water is insignificant.

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5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_____ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the General Motors Powertrain Bedford Facility, EPA ID # IND 006 036 099, located at 105 GM Drive, Bedford, Indiana under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

_____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date _____
 (print) _____
 (title) _____

Supervisor (signature) _____ Date _____
 (print) _____
 (title) _____
 (EPA Region or State) _____

Locations where References may be found:

RCRA Environmental Indicator CA725 Report and the documents cited in Section 6 of the CA725 Report

Contact telephone and e-mail numbers

(name) _____
(phone #) _____
(e-mail) _____

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

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B1 INTRODUCTION

This appendix provides information and calculations that support the discussion in the Resource Conservation and Recovery Act (RCRA) Environmental Indicator (EI) CA725 Report for the General Motors Corporation (GM) Powertrain Bedford Plant (Facility) in Bedford, Indiana. The information in this appendix is organized as follows:

- The scenarios for potential human exposure under current conditions identified in Section 3 of the CA725 Report are summarized in Section B2 – Exposure Assessment, which also discusses the estimation of exposure concentrations and chemical intakes for each exposure scenario.
- Toxicity information for the constituents included in the risk-based evaluation of the potential exposures in Section 4 of the CA725 Report is summarized in Section B3 – Toxicity Assessment.
- The risk calculations that support the discussion of the significance of potential exposures in Section 4 of the CA725 Report are presented in Section B4 – Risk Characterization. Uncertainties associated with the risk estimates are also discussed in this section.

The methods used in the risk-based evaluation of the potential current exposures are based on USEPA risk assessment guidance, and the interpretation of the evaluation results is based on USEPA risk management policies for RCRA corrective action. The data used in the evaluation were the RFI field investigation data available in the project database as of September 28, 2004 (which include data collected through RFI Work Plan Addendum No. 6), except soil, sediment, surface water, and spring water data from areas where removal action has been completed or initiated at the time the CA725 Report was prepared.

The references cited in this appendix are included in Section 6 of the CA725 Report. Detailed information and calculation sheets supporting the risk-based evaluation are provided in the attachments to this appendix.

B2 EXPOSURE ASSESSMENT

This section discusses the potential exposures that are relevant under current conditions at and around the Facility. The environmental setting at and around the Facility, including climate, geology, hydrogeology, land cover, surface water bodies, water supply, and groundwater use, are discussed in the Current Conditions Report (CRA 2001a) and the RFI Work Plan (CRA 2001b). The potentially exposed populations and complete exposure pathways that are identified in Section 3 of the CA725 Report are discussed in Section B2.1.

For the potential exposures discussed in this section, exposure is quantified as a dose, which is defined as follows:

$$\text{Dose} = \text{Concentration} \cdot \text{Intake}$$

The dose for evaluating cancer risk is averaged over a lifetime and is called a lifetime average daily dose (LADD). For evaluating long-term (or chronic) noncancer effects, the dose is averaged over the period of exposure and is called an average daily dose (ADD).

The concentration term in the dose equation refers to the concentration in an environmental medium to which a population is exposed over a specified period. The intake term refers to the intake rate of the environmental medium, which is a function of the magnitude, frequency, and duration of exposure. The methods for estimating the concentration term are discussed in Section B2.2. The exposure factors that are used to quantify the magnitude, frequency, and duration of potential exposures are discussed in Section B2.3.

B2.1 Exposure Pathways

The complete exposure pathways for the potentially exposed populations discussed in Section 3 of the CA725 Report are summarized in this section. Exposure pathways for on-site receptors are discussed in Section B2.1.1, and exposure pathways for off-site receptors are discussed in Section B2.1.2.

B2.1.1 Potential On-Site Exposures

As discussed in Section 3.1 of the CA 725 Report, potentially exposed on-site receptors include routine workers, construction workers, and trespassers. The types of potential exposures for each receptor are discussed below.

Routine Workers

The largest receptor population at the Facility consists of workers who are engaged in routine manufacturing. Routine workers are engaged in industrial activities that generally take place indoors. During limited time outdoors, workers could contact soil with constituent concentrations higher than screening criteria in unpaved areas. Potential routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of soil vapor and airborne particulates.

Construction Workers

A small fraction of the workers at the Facility conduct occasional subsurface construction or maintenance activities. Such activities are expected to be of limited size and duration. If these activities were to be conducted without the benefit of the Facility's health and safety protocols, construction workers could be exposed to constituents concentrations higher than screening criteria in surface and subsurface soil, shallow groundwater, and spring water at the Facility. Potential routes of exposure to soil would include incidental ingestion, dermal contact, and inhalation of soil vapor and airborne particulates. Potential routes of exposure to groundwater and spring water would include incidental ingestion, dermal contact, and inhalation of vapor.

Trespassers

Fencing and plant security control access to most portions of the Facility, so that trespassing is unlikely. This control would also limit the duration of any unauthorized access, if to occur, as well as the types of activities while on-site. As discussed in Section 3.1.3 of the CA725 Report, trespassers could come into contact with surface water and surface soil with constituent concentrations higher than screening criteria at Parcel 201(GM) and the Plant Boundary, respectively, which are either not within the Facility's fencing or accessible to the public. Potential routes of exposure would include incidental ingestion, dermal contact, and inhalation.

B2.1.2 Potential Off-Site Exposures

As discussed in Section 3.2 of the CA725 Report, potentially exposed off-site receptors include residents, trespassers, and construction workers. The types of potential exposures for each receptor population are discussed below.

Residents

Surface soil with constituent concentrations higher than screening criteria are present at residential properties that border certain sections of Bailey's Branch, Pleasant Run, and the northern and western tributaries where removal action has not yet been completed, as

identified in Table 3-2 of the CA725 Report. Residents at these properties could be exposed to such surface soil if they were to unintentionally encounter these areas on occasion. Potential routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of soil vapor and airborne particulates.

Trespassers

Trespassers could come into contact with environmental media with constituent concentrations higher than screening criteria along certain sections of Bailey's Branch, Pleasant Run, and the northern and western tributaries where removal action has not yet been completed. However, as discussed in Section 3.2.2 of the CA725 Report, routine trespasser contact with such media in these areas is unlikely because of the warnings that have been given to the general public in and around the City of Bedford to avoid these areas.

Trespassers could be exposed to surface soil and spring water if they were to spend time at parcels that are not occupied by residents (see Table 3-2 of the CA725 Report) despite the warnings. Trespassers could also be exposed to stream bank soil, sediment, and surface water if they do not heed the warnings posted at the potential access points to the stream. Potential routes of exposure to surface and stream bank soil would include incidental ingestion, dermal contact, and inhalation of soil vapor and airborne particulates. Potential routes of exposure to sediment would include incidental ingestion and dermal contact. Potential routes of exposure to spring and surface water would include incidental ingestion, dermal contact, and inhalation of vapor.

Construction Workers

Workers who perform construction or maintenance in the vicinity of the Facility could be exposed to surface and subsurface soil with constituent concentrations higher than screening criteria to a reasonably expected maximum excavation depth of 10 feet. Potential exposure of these workers via contact with spring water with constituent concentrations higher than screening criteria is also possible. Their activities in areas with such media are expected to be of limited duration (e.g., installation or repair of utilities). Potential routes of exposure to soil would include incidental ingestion, dermal contact, and inhalation of vapor and airborne particulates. Potential routes of exposure to spring water would include incidental ingestion, dermal contact, and inhalation of vapor.

B2.2 Estimation of Exposure Concentrations

This section discusses the estimation of exposure concentrations for the media to which receptors could be exposed via the pathways summarized above. Section B2.2.1 discusses the

calculation of exposure concentrations in soil. The calculation of exposure concentrations in groundwater, sediment, spring water, and surface water is discussed in Section B2.2.2. Fate and transport models used in the estimation of exposure concentrations are introduced in Section B2.2.3.

B2.2.1 Soil

The calculation of site-specific background metal concentrations is discussed in Section B2.2.1.1. The calculations of exposure concentrations in soil for on-site and off-site areas are discussed in Sections B2.2.1.2 and B2.2.1.3, respectively.

B2.2.1.1 Background Levels

Background soil samples were collected during the RFI to determine naturally-occurring levels of metals in soil at and around the Facility. Background soil samples were collected from nine on-site locations where no manufacturing or management of production materials or wastes is known to have occurred. At each on-site location, one sample was collected from 0 feet bgs to 2 feet bgs, and at some of these locations, an additional subsurface sample (from 2 feet bgs to 8 feet bgs) was collected. The details of the background soil sampling were described in the RFI Work Plan and Addendum No. 1 (CRA 2001b). The analytical data were provided in the Soil TM (CRA 2004d).

The concentrations of metals in the samples from the 0 to 2 feet bgs interval are the most representative of background exposures to metals in soil because surface soil is encountered much more often than deeper soil. Furthermore, background levels for most metals calculated using both surface and subsurface concentrations are similar to or higher than the background surface soil concentrations used in the risk evaluation. Therefore, the data from the surface interval are used in calculating background levels of metals in soil for exposure assessment purposes. In addition, surface soil data collected from six off-site locations were determined to be representative of background metal concentrations in the vicinity of the Facility and were also included in the calculations. The metal concentrations in background soil from the surficial soil are summarized in Attachment B.1, which also include summary statistics describing the concentration distributions.

Attachment B.1 summarizes the 95% upper confidence level (UCL) calculations for site-specific background metals. The 95% UCLs presented are nonparametric bootstrap confidence limits on the mean (Efron and Tibshirani 1998) calculated from 4,000 bootstrap replications. Nonparametric bootstrap statistical limits are more reliable than parametric statistical limits because, unlike parametric limits, they do not rely on assumptions about distribution shapes

that are often difficult to justify. Silver was not detected in background samples, so a background level was not calculated for silver. For all metals, site-related concentrations are calculated by subtracting site-specific background concentrations from the measured concentrations in soil.

The estimates of cancer risk and noncancer HQ for the background metals in soil are also shown in Attachment B.1. These estimates represent the levels of cancer and noncancer risk associated with exposure to background levels of metals in soil at and around the Facility. The risk estimates for exposure of industrial workers and residents to background metal concentrations were calculated using the exposure factors appropriate for each type of receptor, as discussed in Section B4.2.1 and B4.3.1, respectively.

Background levels are also used in the evaluation of metal concentrations in sediment, as noted in Section 2.3 of the CA725 Report. In that case, the 95th percentile background sediment concentrations from Lawrence County, Indiana (Wente 1994) are used to evaluate the metals concentrations in sediment that are higher than screening criteria.

B2.2.1.2 On-Site Exposures

Reasonable maximum exposures (RME) are conservatively estimated in this evaluation for on-site areas by using the maximum detected concentrations at each area for most constituents and the 95% UCLs on the mean for certain constituents, if sufficient data are available for an exposure unit. In this approach, maximum concentrations are first used to calculate upper-bound estimates of cumulative cancer and noncancer risks. If these upper-bound estimates of RME risks do not exceed USEPA's cumulative cancer and noncancer risk triggers for corrective measures (i.e., cumulative site-related cancer risk of 10^{-4} and noncancer hazard index (HI) of 1), then further calculations are not necessary.

If an upper-bound estimate exceeds a trigger for corrective measures, then the estimate is refined by replacing the maximum concentrations that contributed the most to the upper-bound estimate with 95% UCLs. Experience with this approach at many facilities shows that cumulative cancer and noncancer risk estimates are often influenced by only a few constituents. This means the computation of 95% UCLs, which can be time-consuming, is usually necessary for only a few constituents.

The use of maximum concentrations for many constituents introduces more conservatism than necessary for RME estimates because it assumes constant, simultaneous worst-case exposure to many constituents, when the RME generally would not have so many constituents at worst-case

concentrations at all times. Furthermore, the UCL calculations are based on the highest concentrations in the appropriate depth interval for the specific exposure scenario (0 to 2 feet for routine workers, and 0 to 10 feet for construction workers) at each sampling location if more than one sample was collected from the relevant interval at the particular location. This approach was used to streamline the computation of 95% UCLs, but introduced additional conservatism that tends to overestimate the RME. The uncertainties associated with the use of such conservative estimates of exposure concentrations in evaluating the significance of potential exposures is discussed in Section B4.5.

The 95% UCL for a constituent is calculated using the nonparametric bootstrap method known as the bias-corrected and accelerated (BCa) method with 4,000 bootstrap replications (Efron and Tibshirani 1998). A nonparametric bootstrap confidence interval does not rely on assumptions about the data's underlying probability distribution which are often difficult to confirm, but instead are based on statistical re-sampling of the empirical distribution of the observed concentrations. For an empirical distribution that is approximately normal, the bootstrap confidence interval will be essentially the same as the normal confidence interval. For an empirical distribution that is not normal, however, the bootstrap confidence interval will be more accurate than a confidence interval calculated assuming a normal (or even lognormal) distribution (USEPA 1997c).

The constituents selected for 95% UCL calculations are those with maximum concentrations that contribute the most to the initial upper-bound estimates of the RME cumulative risks, if these data sets have at least eight data points. Using 95% UCLs for these constituents and maximum concentrations for other constituents still overestimates the RME cumulative risks, but is an efficient approach that avoids 95% UCL calculations that would not materially affect cumulative risk estimates, and is consistent with USEPA guidance (1989; p 6-25). UCLs were not calculated for data sets with less than eight data points, because nonparametric BCa bootstrap UCLs might be less reliable for these smaller data sets.

The grouping of data for the UCL calculations was done according to existing area designations, except for AOI 4a, Parcel 215(GM), and Parcel 216(GM). As shown in Attachment B.2, these areas have physical features such as fences or streams that create logical exposure units that do not correspond to the way in which soil data were originally assigned to these area designations. Therefore, new exposure areas (AOI 4a_west, AOI 4a_south, P215_area, P216_east, and P216_west) were defined to match the logical exposure units, and the soil data were reassigned to the new areas for UCL calculations as shown in Attachment B.2.

B2.2.1.3 Off-Site Exposures

As discussed in Section 4.2 of the CA725 Report, potential exposures of residents and trespassers to surface soil in off-site parcels are evaluated using the maximum detected concentrations at each area for most constituents and area-weighted concentrations for PCBs. The area-weighted concentrations are based on the highest concentrations in the surface soil (top 2 feet) at each sampling location and the fraction of the property represented by each sampling location. This fraction was determined by tessellating the property with Thiessen polygons at each sampling location. In this approach, each point at the property is assigned the PCBs concentration of its nearest PCBs sampling location. The polygon for a sampling location is created using the perpendicular bisectors of the line segments that connect that location to its nearest sampling locations. Vertices of the polygon are located at the intersection of two bisectors or at the parcel boundary. Figures that show the tessellation for each parcel are provided in Attachment B.2.

The use of area-weighted concentrations for PCBs is necessary because the soil sampling locations at the properties are generally concentrated in relatively small areas (e.g., along the stream's floodplain). In general, large parts of the properties, including where the actual residences are located, do not have soil with constituent concentrations higher than screening criteria and are represented by relatively few soil samples. The area-weighted approach ensures that sampling locations that best represent where residents spend most of their time are not underrepresented in exposure estimates. However, using area-weighted concentrations to represent concentrations to which residents are exposed is still highly conservative, since it assumes that residents have an equal chance of contact with all points of the property when they are actually avoiding areas that have soil with constituent concentrations higher than screening criteria. The uncertainties associated with the use of this conservative assumption for exposure concentrations in evaluating the significance of potential residential exposures is discussed in Section B4.5.

Potential exposures of construction workers to off-site surface and subsurface soil, and potential exposures of trespassers to off-site stream bank soil are conservatively estimated using exposure concentrations as described in Section B2.2.1.2.

B2.2.2 Other Media

Exposure concentrations for sediment, groundwater, spring water, and surface water are conservatively estimated using the highest detected concentrations in these media at each area, to streamline risk calculations. However, as discussed above, the use of maximum concentrations introduces more conservatism than necessary for RME estimates. In addition,

the maximum concentrations in unfiltered and filtered water samples for PCBs and metals are conservatively used to evaluate all exposure routes even though filtered concentrations are more appropriate for calculating risks for the dermal and inhalation exposure routes. The uncertainties associated with the use of such conservative estimates of exposure concentrations in evaluating the significance of potential exposures is discussed in Section B4.5.

B2.2.3 Fate and Transport Models

The following models are used to estimate exposure concentrations for the exposure scenarios discussed in Sections 3 and 4 of the CA725 Report. These models are used by USEPA and state regulatory agencies for screening-level analysis. The following are brief descriptions of the models. Further details of these models are provided in USEPA guidance and the attachments to this appendix. Physical and chemical information used in the calculations is provided in Attachment B.3.

Vapor and Particulate Emission from Soil

The method for estimating vapor emissions from soil is based on a nonsteady-state model derived by Jury et al. (1983) that USEPA has adapted for screening-level analysis (USEPA 1996). This model conservatively assumes that volatile chemicals are present in the soil to an infinite depth. The equation for the normalized average vapor flux J_v a chemical from unsaturated soil is given by:

$$J_v = 2 C_{s,0} \rho_b \sqrt{\frac{D_E}{\pi T}}$$

$$D_E = \frac{D_G H + D_L}{\rho_b K_d + \theta_w + \theta_a H}$$

$$D_G = D_{air} \cdot \frac{\theta_a^{10/3}}{n^2} \quad D_L = D_{water} \cdot \frac{\theta_w^{10/3}}{n^2}$$

Derivation of this equation and definition of the equation parameters can be found in the Jury et al. 1983 journal article and in USEPA guidance (1996), and therefore is not repeated here. The values for chemical-specific parameters and default soil parameters recommended in the 1996 USEPA guidance are used in calculating J_v .

Emission of respirable soil particulates (PM₁₀) is calculated using the wind-erosion model recommended by USEPA (1996) with USEPA-default soil parameters and site-specific wind speed (NOAA 1993).

Vapor Emission from Exposed Water

The model for estimating vapor emissions from exposed water is based on mass-transfer coefficients recommended in USEPA guidance (1995b). The normalized vapor flux J of a chemical from an exposed water surface is estimated using an overall mass transfer coefficient as follows:

$$K_L = \left(\frac{1}{k_l} + \frac{1}{Hk_g} \right)^{-1} \left(\frac{m}{10^2 \text{ cm}} \right) \left(\frac{10^3 \text{ L}}{\text{m}^3} \right)$$

where H is the Henry's law constant, and k_l and k_g are the liquid-phase and gas-phase mass transfer coefficients (in cm/s) given by the following:

$$k_l = \left(\frac{MW_o}{MW} \right)^{0.5} \left(\frac{T}{298^\circ\text{K}} \right) k_{l,o}$$

$$k_g = \left(\frac{MW_w}{MW} \right)^{0.335} \left(\frac{T}{298^\circ\text{K}} \right)^{1.005} k_{g,w}$$

where MW , MW_o , and MW_w are the molecular weights of the chemical, oxygen, and water, T is the water's absolute temperature, $k_{l,o}$ is the liquid-phase mass transfer coefficient for oxygen, and $k_{g,w}$ is the gas-phase mass transfer coefficient for water vapor.

Air Dispersion

The air dispersion (C/Q) term used in the calculations of vapor and particulate emissions from soil for routine workers and trespassers at the Facility is the USEPA default value used in the calculation of the Region 9 PRGs (USEPA 2002). The C/Q terms for the other exposure scenarios are estimated using USEPA's SCREEN3 air dispersion model (USEPA 1995a). The area-source algorithm in SCREEN3 is used with default and region-specific meteorological parameters to estimate maximum 1-hour normalized air concentrations at ground level. Source areas are estimated as square or rectangular sources and the averaging times are adjusted according to the specific exposure as described below.

For the construction worker scenarios, an area source of a 15-foot by 15-foot excavation pit is used to estimate maximum 1-hour normalized air concentrations. The maximum 1-hour air concentration is then converted to maximum 24-hour average air concentrations using a conservative factor of 0.4 (USEPA 1995a).

For potential exposures of residents and trespassers to vapor emissions from soil in off-site parcels, the C/Q term is calculated as an annual average normalized concentration for a 3-acre area using air dispersion modeling results discussed in the Downstream Parcels Removal Action Work Plan (CRA 2004a). The air dispersion factor is approximately 15 mg/m^3 per $\text{mg/m}^2\text{-s}$, based on the average of USEPA's dispersion factors for the two geographic regions nearest Indiana (i.e., Chicago, IL and Cleveland, OH). This value is also used for the emission of respirable soil particulates (PM_{10}) used in the calculations.

For potential exposures of trespassers to stream bank soil and surface water, an area source of a 1,000 ft in length and 20 ft in width for surface water and soil is assumed, which corresponds to a conservative estimate of the maximum area a trespasser could be exposed to during the exposure time of one hour per event as discussed below in Section B2.3.4. The maximum 1-hour air concentrations are converted to maximum 24-hour average air concentrations using a conservative factor of 0.4 (USEPA 1995a). The C/Q term for surface water is also conservatively used as the value for evaluating potential exposures of trespassers to spring water, even though actual spring water areas are considerably less than the size that is assumed for surface water. This simplifies the exposure assessment and would not materially affect risk assessment results as the inhalation route does not contribute significantly to the risks for the chemicals detected in spring water.

The air concentrations estimated using the above approaches are expected to predict higher than actual air concentrations to which receptors would be exposed because of the conservatism associated with model assumptions and parameters. Uncertainties inherent in the models and assumptions used in estimating exposure concentrations are discussed in Section B4.5.

B2.3 Estimation of Intakes

Standard default exposure factors recommended by USEPA for estimating reasonable maximum exposures, where available and appropriate, are used to evaluate the exposure scenarios identified in Section 3 of the CA725 Report. Where standard default exposure factors are not available or not appropriate for an exposure scenario, the evaluation is

conducted using similarly conservative exposure factors that are based on site-specific considerations and professional judgment. The exposure factors used in this evaluation are summarized in Attachment B.4 and are discussed in this section. The chemical information used to estimate the intake is provided in Attachment B.3.

B2.3.1 Routine Workers

The exposure factors for evaluating potential exposure of routine workers to on-site soil via direct contact are as follows.

Soil Ingestion Rate

A soil ingestion rate of 50 mg/day is used for routine workers who spend limited time outdoors. USEPA has recommended the use of this value for evaluating high-end routine worker exposures to soil (USEPA 1991a).

Soil Dermal Contact Rate and Absorption

The dermal contact rate is the product of the exposed skin surface area and the soil-to-skin adherence factor. The exposed skin area of 3,300 cm² and the soil-to-skin adherence factor of 0.2 mg/cm² are the USEPA-recommended skin area and adherence factor for evaluating high-end contact with soil by workers in industrial settings (USEPA 2004). The absorbed dose from dermal contact with soil is estimated by multiplying the dermal contact rate by USEPA-recommended absorption factors for absorption from soil (USEPA 2004).

Exposure Frequency and Duration

The number of days for routine workers to be at the Facility is assumed to be 250 days, which is assumed to occur at a frequency of 5 days/week for 50 weeks out of the year. The exposure duration is assumed to be 25 years. This combination of exposure frequency and exposure duration is expected to be conservative for the amount of time that workers are actually in contact with soil, as routine workers spend the majority of their time indoors. USEPA has recommended the use of these values for evaluating high-end routine worker exposures (USEPA 1991a).

Body Weight

The body weight of 70 kg is the standard USEPA-recommended body weight for assessing exposure to adults (USEPA 1989).

Averaging Time

The averaging time for evaluating cancer risk is equal to a lifetime of 70 years, and the averaging time for evaluating noncancer risk is equal to the exposure duration (USEPA 1989).

B2.3.2 Construction Workers

The exposure factors used for evaluating potential exposure of construction workers to soil and groundwater are as follows:

Soil Ingestion Rate

A soil ingestion rate of 200 mg/day is used for workers performing maintenance work that involves excavation into the soil. This rate is lower than the 480 mg/day that is often cited as USEPA's recommended soil ingestion rate for excavation or construction scenarios (USEPA 1991a). However, the 480 mg/day rate is based on an assumption regarding soil adherence to hands that has been shown in USEPA-funded field studies to overestimate (by 3 to 4-fold) soil adherence to hands during various excavation and construction activities. Replacing the earlier soil adherence assumption with soil adherence data from the USEPA-funded studies (USEPA 1997b) would give a soil ingestion rate of approximately 120 mg/kg to 160 mg/kg. Therefore, using a rate of 200 mg/kg is conservative.

Soil Dermal Contact Rate and Absorption

The dermal contact rate is the product of the exposed skin surface area and the soil-to-skin adherence factor. The exposed skin area of 3,300 cm² and the soil-to-skin adherence factor of 0.2 mg/cm² are the USEPA-recommended skin area and adherence factor for evaluating high-end contact with soil by workers in industrial settings (USEPA 2004). The absorbed dose from dermal contact with soil is estimated by multiplying the dermal contact rate by USEPA-recommended absorption factors for absorption from soil (USEPA 2004).

Water Ingestion Rate

A rate of 0.005 L/hour is used for incidental ingestion during construction work that would encounter groundwater or spring water. This rate is 10% of the rate that USEPA (1989) recommends for ingestion while swimming, and represents a very conservative estimate of incidental ingestion that could occur during construction work.

Water Dermal Contact Rates

The exposed skin surface area is the same as that discussed above for exposure to soil. Workers are conservatively assumed to be covered with groundwater or spring water over this exposed skin surface area for 2 hours per event. The absorbed dose for organic chemicals is estimated using a nonsteady-state approach (USEPA 2004), which is more conservative than the steady-state approach (USEPA 1989), particularly for hydrophobic chemicals. The permeability coefficients (K_p) for dermal absorption are estimated following USEPA guidance (2004).

Exposure Frequency and Duration

The number of days of construction/maintenance activities is assumed to be 50 days, which is assumed to occur at a frequency of 5 days/year for a period of 10 years. This combination of exposure frequency and exposure duration is expected to be conservative for the amount of time that workers are actually in contact with soil, groundwater, and spring water (as opposed to the total time for maintenance or construction, which typically includes time not associated with excavation). The assumption of 5 days/year can represent the time for a few small repairs per year or one larger repair. The duration of 10 years is more than twice the length of time that workers typically work at one location (USEPA 1997b).

Body Weight

The body weight of 70 kg is the standard USEPA-recommended body weight for assessing exposure to adults (USEPA 1989).

Averaging Time

The averaging time for evaluating cancer risk is equal to a lifetime of 70 years, and the averaging time for evaluating noncancer risk is equal to the exposure duration (USEPA 1989).

B2.3.3 Residents

The exposure factors for evaluating potential exposure of residents to surface soil are as follows:

Soil Ingestion Rates

Incidental soil ingestion rates of 200 mg/day and 100 mg/day are conservatively used for characterizing high-end exposure of children (age 1 to 6) and adults (age 7 to 31) to soil, respectively. USEPA had recommended the use of these values for evaluating high-end residential exposures (USEPA 1991a). However, more recent USEPA guidance that is

based on a more comprehensive review of the scientific literature indicates that 100 mg/day and 50 mg/day also can be used for characterizing high-end exposure of children and adults to soil, respectively (USEPA 1997b).

Soil Dermal Contact Rates and Adsorption

The dermal contact rate is the product of the exposed skin surface area and the soil-to-skin adherence factor. Exposed skin areas of 2,800 cm² and 5,700 cm² are used for characterizing the high-end exposed skin areas for children and adults, respectively. These values are based on the head, hands, forearms, lower legs, and feet of children being exposed to soil and the head, hands, forearms, and lower legs of adults being exposed. This assumes a barefoot child with a short sleeve shirt and short pants, and an adult with short sleeve shirt and short pants. These exposed areas comprise approximately 25% of the total skin surface area of the body.

Soil-to-skin adherence factors of 0.2 mg/cm² and 0.07 mg/cm² are used for characterizing the soil adherence for children and adults, respectively. The use of these values for evaluating high-end residential exposures is recommended in USEPA guidance (2004).

Exposure Frequency

An exposure frequency of 350 days per year is used for evaluating high-end residential exposure of children and adults (USEPA 1991a). This exposure frequency assumes daily exposure at the residence, except for two weeks per year away from home (e.g., while on vacation).

Exposure Duration

The exposure duration is 30 years and is based on the USEPA-recommended exposure duration for evaluating high-end residential exposures (USEPA 1991a). It is the 95th percentile number of years residents live at one location.

Body Weights

Body weights of 15 kg and 70 kg are the standard USEPA-recommended body weights for assessing exposure to children and adults, respectively (USEPA 1989).

Averaging Time

The averaging time for evaluating cancer risk is equal to a lifetime of 70 years, and the averaging time for evaluating noncancer risk is equal to the exposure duration (USEPA 1989).

B2.3.4 Trespassers

The exposure factors for evaluating potential exposure of trespassers (adolescents between ages 9 to 18) to soil, sediment, and surface water are as follows:

Soil Ingestion Rate

The soil ingestion rate of 100 mg/day is assumed to be equal to that of an adult resident as discussed in Section B2.3.3.

Sediment Ingestion Rate

The sediment ingestion rate of 50 mg/day is used for evaluating high-end exposure of adults. The sediment ingestion rate is 50% of the USEPA-recommended soil ingestion rate of 100 mg/day for adults (USEPA 1991a), based on professional judgment that simultaneous contact with surface water in this scenario would tend to wash sediment off hands and thereby reduce incidental sediment ingestion during hand-to-mouth contact.

Water Ingestion Rate

A rate of 0.005 L/hour is used for incidental ingestion of surface or spring water during trespassing. This rate is 10% of the rate that USEPA (1989) recommends for ingestion while swimming.

Dermal Contact Rates and Absorption

The exposed skin surface area for adolescent trespassers is 3,950 cm². This area is based on exposed skin on the arms, legs and hands while trespassing. The soil and sediment adherence factors are the same as that recommended in USEPA guidance for soil, i.e., 0.07 mg/cm² for adults (USEPA 2004). The absorbed dose from dermal contact with soil and sediment is estimated by multiplying the dermal contact rate by USEPA-recommended absorption factors for absorption from soil (USEPA 2004).

Trespassers are conservatively assumed to be covered with surface or spring water over the exposed skin surface area for 1 hour per event. The absorbed dose for organic chemicals in water is estimated using a nonsteady-state approach (USEPA 2004). The permeability coefficients (K_p) for dermal absorption are estimated following USEPA guidance (2004).

Exposure Frequency and Time

An exposure frequency of 72 days per year is used for evaluating exposure of adolescent trespassers to surface soil at Plant Boundary and vacant parcels. This exposure frequency

assumes exposure twice a week for nine months of the year, which excludes the three winter months.

An exposure frequency of 24 days per year is used for evaluating exposure of adolescent trespassers to sediment, surface water, stream bank soil, and spring water. This exposure frequency assumes exposure twice a week for three months when the average air temperature is above 70 F (NOAA 1993).

The exposure time is assumed to be 1 hour per event and one event per day. This assumption is incorporated into the risk calculations using “fraction contacted” terms that prorate daily contact rates to hourly rates. For the soil ingestion and dermal contact routes, the daily soil ingestion and dermal contact rates discussed above are considered to apply over the 16 hours when people are awake and have potential for contact with soil or soil-derived household dust. As such, a fraction contacted term of 1/16 (or 0.0625) is used to prorate these daily rates to hourly rates. The same fraction contacted term of 0.0625 is used for prorating the daily sediment ingestion and dermal contact rates discussed above.

For the inhalation route, risk estimates are calculated using unit risk factors (URFs) and reference concentrations (RfC) as discussed below in Section B4.1. These calculations implicitly incorporate a daily inhalation rate of 20 m³, which USEPA considers to be based on a 24-hour day when evaluating residential exposures and on an 8-hour day when evaluating worker exposures (USEPA 1991a). In this evaluation, the inhalation rate of trespassers is conservatively assumed to be the same as the higher inhalation rate of workers. As such, a fraction contacted term of 1/8 (or 0.125) is used to prorate the implicit daily inhalation rate to an hourly rate.

Exposure Duration

The exposure duration of 10 years corresponds to the number of years from ages 9 to 18.

Body Weight

The body weight of 51 kg is the standard USEPA-recommended body weight for assessing exposure to adolescents (USEPA 1997b).

Averaging Time

The averaging time for evaluating cancer risk is equal to a lifetime of 70 years, and the averaging time for evaluating noncancer risk is equal to the exposure duration (USEPA 1989).

Uncertainties associated with the exposure factors used in estimating chemical intakes are discussed in Section B4.5.

B3 TOXICITY ASSESSMENT

A toxicity assessment identifies potential adverse health effects that are associated with exposure to chemicals, and determines the dose-response relationship between exposure and the occurrence of adverse effects. The toxicity values used in evaluating the significance of potential exposures to soil, sediment, groundwater, and surface water were compiled from the following USEPA hierarchy of sources (USEPA 2003c):

1. Integrated Risk Information System (IRIS)
2. Provisional Peer Reviewed Toxicity Values (PPRTV)
3. Other Toxicity Values (e.g., historical HEAST and NCEA provisional values)

Provisional Peer Reviewed Toxicity Values from the National Center for Environmental Assessment (NCEA) are preferred over values from HEAST (Health Effects Assessment Summary Tables; USEPA 1997a) when they represent more recent Agency guidance. When a toxicity value was not available from these sources, other USEPA and non-USEPA sources of toxicity values were consulted. The toxicity values used in the evaluation and their sources are summarized in Attachment B.5, and are discussed below for carcinogens and non-carcinogens in Sections B3.1 and B3.2, respectively. Route-to-route extrapolation of toxicity values is discussed in Section B3.3. A more detailed discussion of the toxicity values for PCBs is discussed in Section B3.4, since PCBs are the predominant constituents with concentrations higher than screening criteria.

B3.1 Toxicity Values for Carcinogens

USEPA considers chemicals belonging to the following USEPA cancer weight-of-evidence groups as human carcinogens:

Group A	Known Human Carcinogen: Sufficient evidence of carcinogenicity in humans
Group B1	Probable Human Carcinogen: Limited evidence of carcinogenicity in humans
Group B2	Probable Human Carcinogen: Sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans
Group C	Possible Human Carcinogen: Limited evidence of carcinogenicity in animals and inadequate or lack of evidence in humans

As shown in Attachment B.5, USEPA has designated some of the constituents as Group B2 or Group C, which means that USEPA acknowledges that there is either inadequate or a lack of evidence that these constituents actually cause cancer in humans. Therefore, evaluating these constituents as human carcinogens in the evaluation is highly conservative.

USEPA-derived cancer slope factors (SFs) and inhalation unit risk factors (URFs) for these constituents and their sources are shown in Attachment B.5. The oral SFs and URFs represent 95% upper confidence bounds on the probability of getting cancer over a lifetime per unit dose. As recognized by USEPA, there is significant scientific evidence that some of the SFs and URFs may be overly conservative and may ignore the potential existence of threshold doses. Nonetheless, they are used here as conservative assessment tools.

B3.2 Toxicity Values for Noncarcinogens

Constituents designated by USEPA as belonging to the cancer weight-of-evidence Group D (Not Classifiable as to Human Carcinogenicity) are considered noncarcinogens. Constituents not designated as belonging to any cancer group are treated as noncarcinogens. USEPA-derived chronic reference doses (RfDs) and chronic inhalation reference concentrations (RfCs) for these constituents and their sources are shown in Attachment B.5.

The oral RfDs and inhalation RfCs represent conservative estimates of the daily exposure to the human population, including sensitive subpopulations (e.g., children), which are likely to be without an appreciable risk of deleterious effects during a lifetime. These RfDs and RfCs typically incorporate several safety factors to account for uncertainties in their derivation, which in combination often result in overall uncertainty factors of 1,000 or more. Furthermore, for many constituents, there is significant scientific debate about the validity of these RfDs and RfCs, and the association of these doses and concentrations to potential adverse health consequences. Nonetheless, the RfDs and RfCs are used here as conservative assessment tools.

B3.3 Extrapolation of Toxicity Values

The USEPA sources of toxicity values do not provide dermal toxicity values for any of the constituents. Therefore, oral toxicity values (i.e., oral SFs and RfDs) are used as dermal toxicity values in this evaluation. Adjustments to the oral toxicity values are made in this route-to-route extrapolation based on USEPA guidance (2004).

The USEPA sources of toxicity values do not provide inhalation toxicity values (URFs and RfCs) for all of the constituents. For a constituent that has no inhalation toxicity value, the oral

SF and/or RfD, if available, is converted to an URF and/or RfC using default USEPA assumptions (USEPA 1997a).

Uncertainties introduced by using extrapolated toxicity values are discussed in Section B4.5.

B3.4 Toxicity Values for PCBs

USEPA has developed cancer and noncancer toxicity values for quantitative assessment of health risks associated with exposure to PCBs. These toxicity values are discussed below.

B3.4.1 Cancer Toxicity Values

USEPA classifies PCBs as a “probable human carcinogen”. This means USEPA has determined that there is sufficient evidence that PCBs can cause cancer in animals, but there is inadequate evidence that PCBs can cause cancer in humans. For some chemicals classified as probable human carcinogens, USEPA has developed a cancer slope factor (SF) from animal data to characterize the potential for the chemical to cause cancer in humans. The SF represents a 95% upper confidence bound on the probability of getting cancer over a lifetime per unit dose, as noted in Section B3.1. For PCBs, USEPA has developed a range of SFs ranging from 0.07 to 2 per mg/kg/day based on data from studies with rodents. The SF of 2 per mg/kg/day is the most conservative value, and is the one used in this evaluation.

To provide conservative estimates of inhalation risk, the SF of 2 per mg/kg/day is converted to an inhalation URF according to USEPA guidance (1997a). Specifically, the SF is multiplied by a breathing rate of 20 m³/day and divided by a body weight of 70 kg, which gives an URF of 0.57 per mg/m³.

B3.4.2 Noncancer Toxicity Values

The types of noncancer health effects that can result from exposure to a chemical generally depends on whether the exposure is long-term (chronic), intermediate-term (subchronic), or short-term (acute). Because residential exposures are considered long-term, chronic noncancer toxicity values, or chronic reference doses (RfDs) are used to estimate noncancer risk. A chronic RfD is an estimate of the daily exposure that can be experienced by the general human population (including sensitive subgroups) over a lifetime without an appreciable risk of deleterious effects, as noted in Section B3.2. For oral exposures, USEPA has developed two chronic RfDs for PCBs: 7 x 10⁻⁵ mg/kg/day for Aroclor 1016 and 2 x 10⁻⁵ mg/kg/day for Aroclor 1254. The RfDs for Aroclor 1016 and Aroclor 1254 include uncertainty factors (or safety factors) of 100 and 300, respectively. The oral RfD of 2 x 10⁻⁵ mg/kg/day is the more conservative value, and is the one used in this evaluation. The same oral RfD is used for the

dermal route, following USEPA guidance (2004). USEPA has not derived an inhalation reference concentration (RfC) for PCBs.

USEPA's more detailed discussion of the basis for these toxicity values is provided in its Integrated Risk Information System (IRIS).

B4 RISK CHARACTERIZATION

The risk calculations that support the discussion of the health significance of potential exposures in Section 4 of the CA725 Report is discussed in the following subsections. Section B4.1 describes the methods for quantifying cancer risks and noncancer hazard indices. Sections B4.2 and B4.3 discuss the risk estimates and the significance of the potential exposures associated with chemicals other than lead for on-site and off-site exposures, respectively. Section B4.4 discusses the significance of potential exposures to lead. Uncertainties in the risk evaluation are discussed in Section B4.5.

B4.1 Cancer Risk and Noncancer Hazard Index

The cancer risk associated with potential exposure to a carcinogenic chemical is calculated by multiplying an estimate of the lifetime average daily dose (LADD) for a particular exposure scenario by the cancer slope factor (SF) for the chemical, as follows:

$$\text{Risk} = \text{LADD} \cdot \text{SF}$$

For the inhalation route, the inhalation cancer risk is calculated using the chemical concentration in air (C_{air}) and the URF, as follows:

$$\text{Risk} = C_{\text{air}} \cdot \text{URF} \cdot \frac{\text{EF} \cdot \text{ED}}{\text{AT}}$$

where EF is exposure frequency, ED is exposure duration, and AT is averaging time.

The noncancer hazard quotient (HQ) associated with potential exposure to a noncarcinogenic chemical is calculated by dividing an estimate of the average daily dose (ADD) for a particular exposure scenario by the reference dose (RfD) for the chemical, as follows:

$$\text{HQ} = \frac{\text{ADD}}{\text{RfD}}$$

For the inhalation route, the inhalation HQ is calculated using C_{air} and the RfC, as follows:

$$HQ = \frac{C_{air}}{RfC} \cdot \frac{EF \cdot ED}{AT}$$

The potential cancer risk and noncancer effects that may result from exposure to the combination of constituents at an area are estimated following USEPA guidance (1989), as follows:

$$\text{Cumulative Risk} = \sum_i \text{Risk}_i$$

$$\text{Hazard Index} = \sum_i HQ_i$$

where:

Risk_i = estimated cancer risk for the i th constituent

HQ_i = hazard quotient for the i th constituent

This approach streamlines the evaluation, but may result in estimates of cumulative cancer and noncancer risks that are more conservative than necessary. For example, different chemicals may cause different and unrelated health effects, so summing the HQs for their individual effects would overestimate the significance of their combined effect. Uncertainties associated with this approach are discussed in Section B4.5.

The cumulative cancer risk and HI estimates for each receptor population are compared with USEPA's cancer risk limit of 10^{-4} and HI limit of 1, respectively, for determining whether corrective measures are warranted for a particular area of the Facility (61 FR 19432, May 1, 1996; USEPA 1991b). The risk estimates and results of the comparison to the USEPA-established limits are discussed in the following sections.

B4.2 Risk Estimates for Potentially Exposed Populations On-Site

B4.2.1 Routine Workers

The significance of potential exposures of routine workers via contact with outdoor soil is discussed in Section 4.1.1 of the CA725 Report. The cancer risk and HQ estimates for these exposure routes are calculated using risk-based criteria as described below.

The risk-based criteria (RBC) for the ingestion and dermal routes of exposure are calculated as follows:

$$RBC = \frac{TR}{LADD^* \cdot SF}$$

$$RBC = \frac{THQ \cdot RfD}{ADD^*}$$

The *TR* and *THQ* are 10^{-5} and 1, respectively. The *LADD** and *ADD** are calculated using a concentration of 1 mg/kg in soil and the exposure factors for routine worker discussed in Section B2.3, as shown in Attachment B.4.

The risk-based criteria for the inhalation route are calculated as follows:

$$RBC = \frac{TR \cdot AT}{URF \cdot ET \cdot EF \cdot ED} (J \cdot C / Q)^{-1}$$

$$RBC = \frac{THQ \cdot RfC \cdot AT}{ET \cdot EF \cdot ED} (J \cdot C / Q)^{-1}$$

where the product $J \cdot C / Q$ is an air concentration that is normalized to unit concentration in soil (1 mg/kg). As discussed in Section B2.2.3, the *J* term is the normalized average vapor or particulate flux, and the *C/Q* term is a normalized air concentration.

The risk-based criteria for each route of exposure are then combined to give cancer and noncancer criteria that are based on the combination of all three routes, as follows:

$$RBC = \left(\sum_i RBC_i^{-1} \right)^{-1}$$

The cancer risk and HQ are estimated using these RBC in the following equations, which are analogous to those discussed in Section B4.1.

$$Risk = \frac{C}{RBC} \cdot TR$$

$$HQ = \frac{C}{RBC} \cdot THQ$$

As discussed in Section B2.2, upper-bound cancer risk and HQ estimates in this evaluation are calculated using the highest constituent concentrations in surface soil at each area to identify the constituents that contributed most significantly to the cumulative risk estimates. High-end estimates of cancer risk and HQ are then calculated by using the maximum detected concentrations at each area for most constituents and the 95% UCLs on the mean for certain constituents, if sufficient data are available. The computation of cancer risk and HQ estimates for this scenario are shown in Attachment B.6. The 95% UCLs used in calculating the estimates of the high-end cumulative risk are highlighted with shading on the tables in Attachment B.6.

B4.2.2 Construction Workers

The significance of potential exposures of construction workers via contact with surface and subsurface soil, shallow groundwater, and spring water, if such activities were to be conducted without the benefit of the Facility's health and safety protocols, is evaluated in Section 4.1.2 of the CA725 Report. The computation of risk estimates associated with exposure to soil is discussed in Section B4.2.2.1 and risk estimates associated with exposure to shallow groundwater and spring water are discussed in Section B4.2.2.2.

B4.2.2.1 Contact with Soil

The cancer risk and HQ estimates for potential exposures of construction workers to soil in excavations are calculated using risk-based criteria. The criteria are calculated using the exposure factors for construction worker discussed in Section B2.3, as shown in Attachment B.4, and in a manner analogous to the method discussed in Section B4.2.1, except for the differences in the estimated air concentrations as noted in Section B2.2.3. In addition, emission of respirable soil particulates (PM₁₀) during excavation activities at the Facility is expected to comply with the National Ambient Air Quality Standard for PM₁₀. Therefore, the 24-hour average PM₁₀ standard of 150 ug/m³ is conservatively used for the *J·C/Q* term.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined routes. The computation of upper-bound and high-end cancer risk and HQ estimates for this scenario are shown in Attachment B.7. The 95% UCLs used in the high-end risk estimates are highlighted with shading on the tables in Attachment B.7.

B4.2.2.2 Contact with Groundwater and Spring Water

The cancer risk and HQ estimates for potential exposures of construction workers to shallow groundwater and spring water are calculated using risk-based criteria. The criteria for the

ingestion and dermal routes are calculated in a manner similar to the method discussed in Section B4.2.2.1. The *LADD** and *ADD** are calculated using unit concentration in groundwater or spring water (1 mg/L) and the exposure factors for construction worker discussed in Section B2.3, as shown in Attachment B.4. The risk-based criteria for the inhalation route are also calculated as discussed in Section B4.2.2.1, except the normalized vapor flux *J* is calculated as discussed in Section B2.2.3.

Estimates of cancer risk and HQ are calculated using risk-based criteria for the combined routes. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in shallow groundwater and spring water at each area are shown in Attachment B.8.

B4.2.3 Trespassers

The significance of potential exposures of trespassers via contact with on-site surface water and surface soil is discussed in Section 4.1.3 of the CA725 Report. The cancer risk and HQ estimates for trespasser exposure to surface water and surface soil are calculated using risk-based criteria that are based on the exposure factors for trespassers discussed in Section B2.3, as shown in Attachment B.4. The criteria are calculated in a manner analogous to the method discussed in Section B4.2.2.2, except for the *C/Q* term, which is calculated as discussed in Section B2.2.3.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined routes. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in surface water and surface soil are shown in Attachment B.9.

B4.3 Risk Estimates for Potentially Exposed Populations Off-Site

B4.3.1 Residents

The significance of hypothetical exposures of residents via contact with surface soil if they were to unintentionally contact areas of their property that have soil with constituent concentrations higher than screening criteria is discussed in Section 4.2.1 of the CA725 Report. The cancer risk and HQ estimates for these exposure routes are calculated using risk-based criteria that are based on the exposure factors for residents discussed in Section B2.3, as shown in Attachment B.4. The criteria are calculated in a manner analogous to the method discussed in Section B4.2.1, except for the difference in the estimated air concentrations, which are calculated as discussed in Section B2.2.3.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined routes. The computation of cancer risk and HQ estimates based on the area-weighted concentration for PCBs and the highest detected concentrations for the other constituents in surface soil at each area are shown in Attachment B.10.

B4.3.2 Trespassers

The significance of potential exposures of trespassers to soil and spring water at parcels that are not occupied by residents is discussed in Section 4.2.2 of the CA725 Report. Trespasser exposures to soil, sediment, and surface water near the stream are also evaluated. The cancer risk and HQ estimates for these exposure routes are calculated using risk-based criteria that are based on the exposure factors for trespassers discussed in Section B2.3, as shown in Attachment B.4. The computation of risk estimates associated with exposure to soil and spring water at parcels that are not occupied by residents is discussed in Sections B4.3.2.1 and B4.3.2.2, respectively. Risk estimates associated with exposure to stream bank soil, sediment, and surface water are discussed in Sections B4.3.2.3, B4.3.2.4, and B4.3.2.5, respectively.

B4.3.2.1 Contact with Soil in Unoccupied Parcels

The cancer risk and HQ estimates for potential exposure of trespassers to soil at parcels that are not occupied by residents are calculated using risk-based criteria. The criteria are calculated in a manner analogous to the method discussed in Section B4.2.1, except for the C/Q term, which is the same as that for residential exposure to soil described in Section B2.2.3.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined routes. The computation of cancer risk and HQ estimates based on the area-weighted concentration for PCBs and the highest detected concentrations for the other constituents in surface soil at each area are shown in Attachment B.11.

B4.3.2.2 Contact with Spring Water in Unoccupied Parcels

The cancer risk and HQ estimates for potential exposure of trespassers to spring water at parcels that are not occupied by residents are calculated using the risk-based criteria described above in Section B4.2.3. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in spring water are shown in Attachment B.12.

B4.3.2.3 Contact with Stream Bank Soil

The cancer risk and HQ estimates for potential exposure of trespassers to stream bank soil are calculated using risk-based criteria. The criteria are calculated in a manner analogous to the method discussed in Section B4.2.1, except for the differences in the estimated air concentrations as noted Section B2.2.3.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined routes. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in stream bank soil within half-mile of Warning Signs 10 to 12 and 30 feet of the stream center (including the area between the northern and southern branches) are shown in Attachment B.13.

B4.3.2.4 Contact with Sediment

The cancer risk and HQ estimates for potential exposure of trespassers to sediment are calculated using risk-based criteria. The criteria are calculated in a manner analogous to the method discussed in Section B4.3.2.3, except there is no inhalation route of exposure to sediment.

Estimates of cancer risk and HQ are calculated using the risk-based criteria for the combined inhalation and dermal routes. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in sediment within half-mile of Warning Signs 10 to 12 are shown in Attachment B.14.

B4.3.2.5 Contact with Surface Water

The cancer risk and HQ estimates for potential exposure of trespassers to surface water are calculated using the risk-based criteria described above in Section B4.2.3. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in surface water within half-mile of Warning Signs 10 to 12 are shown in Attachment B.15.

B4.3.3 Construction Workers

The significance of potential exposures of construction workers via contact with soil and spring water near the Facility is discussed in Section 4.2.3 of the CA725 Report. The computation of risk estimates associated with exposure to soil is discussed in Section B4.3.3.1 and risk estimates associated with exposure to spring water is discussed in Section B4.3.3.2.

B4.3.3.1 Contact with Soil

The cancer risk and HQ estimates for potential exposure of construction workers to soil are calculated using the risk-based criteria described above in Section B4.2.2.1. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in off-site soil are shown in Attachment B.16.

B4.3.3.2 Contact with Spring Water

The cancer risk and HQ estimates for potential exposure of construction workers to spring water are calculated using the risk-based criteria described above in Section B4.2.2.2. The computation of upper-bound cancer risk and HQ estimates based on the highest detected concentration of each constituent in off-site spring water are shown in Attachment B.17.

B4.4 Exposures to Lead

USEPA (2003b) evaluates the significance of lead exposures using blood lead level as an index of exposure, rather than in terms of cancer risks or noncancer HQs. The significance of potential exposures to lead in soil and in spring water is discussed in Section B4.4.1 and Section B4.4.2, respectively.

B4.4.1 Soil

Using a blood lead model, USEPA has established a conservative soil screening level of 400 mg/kg that is protective of residential exposure to lead in soil. USEPA has also recommended a blood lead modeling methodology for deriving criteria that are protective of routine worker exposure to lead in soil (USEPA 2003b). Criteria derived using this methodology can range from approximately 750 mg/kg to 1,750 mg/kg, with an average of approximately 1,000 mg/kg. As USEPA discussed in a recent rulemaking (40 CFR Part 745, January 5, 2001), the soil lead screening level should be compared with the arithmetic mean concentration of lead within the area where potential exposures are assumed to occur in order to be consistent with the principles underlying the blood lead modeling approaches used in deriving the screening level. Attachment B.18 shows the comparison of the mean lead concentrations in surface soil (0 to 2 feet bgs) and the depth-averaged subsurface soil column (0 to 10 feet bgs) with the screening criteria for on-site and off-site areas that are identified to have a complete soil exposure pathway in Section 3 of the CA725 Report.

B4.4.2 Spring Water

In this evaluation, the USEPA-recommended methodology for deriving criteria for routine worker exposure to lead in soil was adapted to derive a criterion for evaluating the significance of construction worker exposure to lead in spring water. The criterion for construction workers

was derived by replacing the soil intake for routine workers with the water intake for construction workers, which are discussed in Section B2.3.2. In this approach, the criterion is conservatively derived by assuming that the construction workers are child-bearing age women and ensuring that their blood lead level would not exceed an equivalent 95th percentile fetal blood lead level of 10 ug/dL (USEPA 2003b).

The blood lead concentration (*PbB*) at the *p* percentile in workers is calculated assuming that *PbB* follows a lognormal distribution (USEPA 2003b):

$$PbB(p) = PbB_{GM} \cdot R \cdot GSD^{z(p)}$$

where *PbB_{GM}* is the geometric mean blood lead concentration, *R* is the ratio of fetal *PbB* to the mother's *PbB*, *GSD* is the geometric standard deviation of *PbB*, and *z(p)* is the standard normal deviate at the *p* quantile.

The geometric mean *PbB_{GM}* is estimated as the sum of a baseline component *PbB_b* and a site-related component *PbB_{site}*, where *PbB_{site}* is calculated as the product of the mean lead uptake and a biokinetic slope factor *BSF* (USEPA 2003b). In this risk assessment, *PbB_{site}* is calculated using the exposure factors discussed in Section B2.3.2 and the *BSF* recommended by USEPA. Attachment B.18 shows the use of this approach to calculate a water contact criterion for the construction worker scenario. The results show that the criterion can range from approximately 74 to 173 mg/L, which corresponds to the ranges of values for *PbB_b* and *GSD* cited in USEPA guidance (2003b).

B4.5 Uncertainty Analysis

B4.5.1 Exposure Concentrations

As discussed in Section B2.2, exposure concentrations in soil for most chemicals in this risk assessment are based on the highest concentrations detected in soil at each area. For on-site exposures, 95% UCLs are calculated for chemicals contributing most significantly to the risk estimates only when an upper-bound estimate of the RME cumulative cancer risk or HI exceeds the cancer risk limit of 10⁻⁴ or the HI limit of 1, respectively. For off-site potential exposures to surface soil, area-weighted concentrations are calculated for PCBs, which is the predominant constituent, to ensure that sampling locations that best represent where off-site receptors (residents and trespassers) spend most of their time are not underrepresented in exposure estimates. This approach streamlines the risk assessment by avoiding additional calculations that would not materially affect conclusions for the EI determination.

However, this approach inflates the cumulative cancer risk and HI estimates that do not exceed 10^{-4} and 1, respectively, since these estimates are based on maximum concentrations for all or most chemicals. As explained in Section B2.2, the use of maximum concentrations introduces more conservatism than necessary for RME estimates because it assumes simultaneous worst-case exposure to these constituents constantly, when the RME generally would not have all the constituents at worst-case concentrations at all times. The use of the highest concentrations at each sampling location (when more than one sample was collected in the soil interval relevant to a receptor) in the UCL and area-weighted concentration calculations introduces additional conservatism in the estimates of exposure concentrations. Furthermore, UCLs were not calculated (and the highest concentrations were used) if fewer than eight data points were available, as a conservative approach to avoid the possibility that nonparametric BCa bootstrap UCLs might be less reliable for such data sets.

Additionally, using area-weighted concentrations to represent the concentration of PCBs to which residents are exposed is highly conservative, since it assumes that residents have an equal chance of contact with all points of the property when they are actually avoiding areas that have soil with constituent concentrations higher than screening criteria. The effects of using more realistic assumptions to account for the much lower likelihood of residents contacting areas with such soil can be quantified by using a time-weighted approach in combination with the area-weighted approach, as illustrated in Attachment B.19.

In Attachment B.19, exposure concentrations for PCBs are calculated assuming (arbitrarily but conservatively) that residents are half as likely to contact areas that have soil with concentrations of PCBs higher than screening criterion as the other areas at the properties where PCBs contribute the most significantly to HI estimates. The example calculations in Attachment B.19 use the Parcel 24 data. These time-weighted exposure concentrations are approximately half of those used in calculating the risk estimates shown on Table 4-11 of the CA725 Report. More realistically, residents might be no more than one-tenth as likely to enter these areas of their property, which means that more realistic exposure concentrations would be no more than approximately one-tenth of those used in calculating the risk estimates on Table 4-11 of the CA725 Report. Therefore, it can be seen that the assumption that residents have equal chance of contact with all points on their properties results in over-estimation of the risks associated with exposure of residents from unintentional contact with areas of their property that have soil with PCB concentrations higher than screening criteria.

The above discussion regarding soil exposure concentrations also applies to the other exposure scenarios discussed in Sections 3 and 4 of the CA725 Report. For instance, construction workers would not be expected to contact groundwater and spring water with the maximum concentrations of every constituent during every on- and off-site excavation. The same can be said for trespasser exposures. Furthermore, using the maximum concentrations in both unfiltered and filtered water samples for PCBs and metals to evaluate potential exposures via the dermal and inhalation routes is likely to over-estimate the risks since particulate-bound chemicals (e.g., PCBs) are expected to be much less available, if at all, for dermal absorption and volatilization.

Most exposure concentrations that are based on mathematical modeling of constituent transfer from soil or groundwater to air are conservative for the same reasons discussed above, since the model estimates are based on the use of maximum concentrations in soil or groundwater. In addition, the model estimates are conservative because they generally do not account for the reduction of constituent concentrations in the soil or groundwater as constituent transfer from these media. As a result, risk estimates that are based on the sum of risk estimates for multiple media would be more conservative than necessary for RME estimates.

B4.5.2 Exposure Factors

As discussed in Section B2.3, most of the exposure factors used in the risk assessment are high-end (i.e., 90th to 95th percentile) estimates of the magnitude, frequency, and duration of potential exposures. When several such high-end factors are multiplied, the resulting estimates of dose will be higher than the 90th percentile of the distribution of exposures in the potentially exposed population and could be higher than the exposure to the maximally exposed individual, particularly when such exposure factors are combined with exposure concentrations that are based on maximum concentrations.

Also, the use of generic default exposure factors for evaluation of potential exposure of workers to soil is more conservative than necessary for RME estimates, which allow the use of site-specific considerations (USEPA 1989). For example, the “fraction contacted” terms used in this evaluation assume that routine workers are exposed to soil for an entire work day at each area, but workers at the Facility actually spend only a small part of the work day at unpaved outdoor areas of the Facility.

The ingestion rate for estimating exposure of construction workers to soil in this risk assessment is 200 mg/day. As noted in Section B2.4.2, this ingestion rate is based on USEPA-compiled soil-to-hand adherence data for construction-related activities (USEPA 1997b), and is

believed to be plausible, conservative, and consistent with the expectation that incidental soil ingestion is associated primarily with hand-to-mouth contact. More recently, USEPA guidance (2003a) recommends an ingestion rate of 330 mg/day that is based on the variability in the data from a single soil ingestion study that involved a small number of individuals. This ingestion rate was not used in the risk calculations for construction workers because it is based on very limited data that might not be appropriate. However, using the somewhat higher ingestion rate of 330 mg/day would not alter the conclusions of the CA725 Report.

B4.5.3 Toxicity Values

As discussed in Section B3.3, the dermal toxicity values used in the risk assessment are oral toxicity values that were extrapolated to the dermal route without chemical-specific judgment regarding whether such extrapolation might be appropriate for a particular chemical. This is a conservative approach to ensure that potential risk via the dermal route is not overlooked. However, some constituents might exhibit different degrees of toxicity for the dermal route relative to the oral route. For such constituents, the extrapolation approach used in the risk evaluation could introduce uncertainty.

The conversion of an oral toxicity value to an inhalation toxicity value generally should be justified by consideration of a number of factors, including point of entry effects, pharmacokinetic data on the chemical's behavior in the different routes of exposure, and differences in the target organs affected. However, as a conservative measure for constituents without any inhalation toxicity values, oral SFs and/or RfDs were converted to inhalation URFs and/or RfCs, respectively, in this evaluation. Use of these extrapolated inhalation toxicity values reduces the potential for underestimating inhalation risks, but could introduce uncertainty.

For PCBs, USEPA has developed a range of SFs ranging from 0.07 to 2 per mg/kg/day, and two chronic RfDs for PCBs: 7×10^{-5} mg/kg/day for Aroclor 1016 and 2×10^{-5} mg/kg/day for Aroclor 1254. The SF of 2 per mg/kg/day and the oral RfD of 2×10^{-5} mg/kg/day are the most conservative values, and are the ones used in this evaluation. These choices of toxicity value are particularly conservative for the evaluation of environmental media such as surface water and spring water in which the PCBs consist of mostly lower-chlorinated Arochlors (e.g., Arochlor 1242).

B4.5.4 Risk Characterization

The summation of cancer risks and HQs for multiple constituents, as described in Section B4, is based on USEPA guidance (1989) to assume dose additivity, which means that constituents

in a mixture are assumed to have no synergistic or antagonistic interactions and each constituent has the same mode of action and elicits the same health effects. In general, this approach can introduce significant uncertainty. However, the majority of the cumulative cancer risk and HI estimates are dominated by contributions from PCBs in most cases, so that the assumption on dose additivity has little effect on the cumulative risk estimates as compared to the other uncertainties discussed above.

A T T A C H M E N T B . 1

Metal Concentrations in Background Surface Soil

**Attachment B.1: Metal Concentrations in Background Surface Soil
Bedford, Indiana**

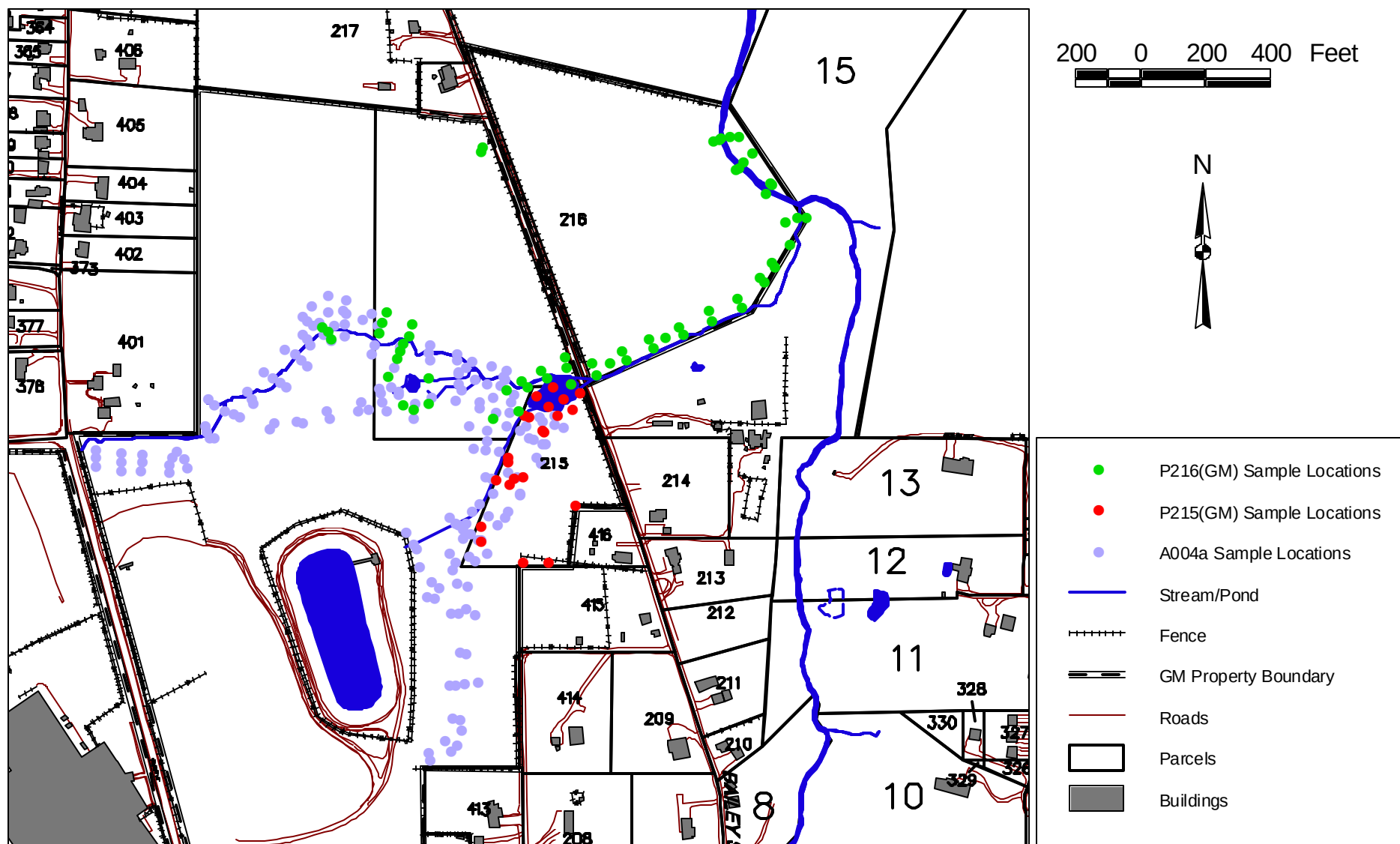
Sample ID	Al mg/kg	Sb mg/kg	As mg/kg	Ba mg/kg	Be mg/kg	Cd mg/kg	Cr mg/kg	Co mg/kg	Cu mg/kg	Fe mg/kg	Pb mg/kg	Mn mg/kg	Hg mg/kg	Ni mg/kg	Se mg/kg	Tl mg/kg	V mg/kg	Zn mg/kg
S-012402-MO-004	12600	0.33 UJ	8.5	118.0	0.47 J	0.11 J	28.3 J	12.2	34.9 J	18300	22.5	1200 J	0.04 J	20.8	0.65 J	1.20 J	29.5	50.4
S-060602-MG-229	13100	0.31 U	7.6	28.6	0.43 J	0.03 U	43.6	2.4 J	11.5	32600	21.1	42	0.01 U	11.6	0.20 U	0.31 U	69.8	55.2
S-060602-MG-225	17700	0.32 U	11.5	67.7	0.27 J	0.03 U	19.8	7.1	14.8	24500	13.3	246	0.05 J	13.0	0.20 U	0.32 U	38.8	45.7
S-010223-MO-002	10700	0.31 UJ	5.9	43.2	0.18 J	0.03 U	14.7	8.7	12.3	17000	13.2	271 J	0.01 U	10.6	0.20 U	0.32 U	27.1	30.2 J
S-010223-MO-003	10200	0.31 UJ	6.8	45.5	0.24 J	0.06 J	16.0	7.3	15.3	16200	20.3	161 J	0.01 U	18.2	0.39 J	0.32 U	23.0	39.5 J
S-010223-MO-001*	12650	0.32 UJ	11.5	65.7	0.31 J	0.07 J	20.0	10.2	13.5	22800	17.3	517 J	0.01 U	12.3	0.56	0.32 U	39.1	43.2 J
S-060602-MG-227	11200	0.29 U	9.9	93.9	0.38 J	0.11 J	21.6	10.5	10.9	19400	16.2	918	0.03 J	12.0	0.19 U	0.30 U	32.6	41.5
S-020602-MG-099	9680	0.31 UJ	8.0	44.2 J	0.03 U	0.13 J	28.9	6.1 J	9.6	20000	14.6	193 J	0.05 J	7.7	0.20 U	0.32 U	31.2	26.0
S-042204-JC-076	12300	0.14 U	6.8	39.7	0.02 U	0.19 J	21.6	13.0	8.5	18300	13.7	379	0.00 U	9.9	0.36 J	0.22 U	28.9	35.6
S-012102-KMV-509*	15650	1.01 J	10.5	91.4	0.37 J	0.05 J	19.4	10.1	20.9	23900	19.1	511	0.05 J	14.8	0.68 J	0.32 U	34.1	49.5
S-042204-DD-015	11900	0.15 U	8.1	88.0	0.38 J	0.46 J	14.4	9.1	10.6	16800	13.9	872	0.04 J	12.2	0.17 U	0.97 J	26.2	48.5
S-042704-DD-017	20200	0.17 U	14.8	118.0	1.20	0.95	37.0	11.7	17.0	31500	23.1	783	0.17	26.8	0.19 U	1.40	51.4	65.8
S-042304-DD-016	11000	0.16 U	12.2	87.3	0.59 J	1.30	23.2	11.6	13.7 J	20800	23.0	966	0.08 J	21.2	0.19 U	1.10 J	31.0	72.4 J
S-042704-DD-013	1820	0.15 U	2.3	18.0 J	0.02 U	0.32 J	5.5	2.1 J	4.3	7560	16.2	302	0.00 U	3.0 J	0.17 U	0.97 J	5.5 J	15.0
S-042704-DD-014	21700	0.16 U	18.7	105.0	1.10	1.10	40.2	11.1	26.6	32800	25.5	568	0.12 J	30.4	0.19 U	1.30 J	55.1	84.6
Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Detected	15	1	15	15	12	12	15	15	15	15	15	15	9	15	5	6	15	15
Minimum	1820.0	0.1	2.3	18	0.02	0.03	5.5	2.1	4.3	7560.0	13.2	42	0.00	3.0	0.17	0.2	6	15
Median	12300.0	0.3	8.5	68	0.37	0.11	21.6	10.1	13.5	20000.0	17.3	511	0.04	12.3	0.20	0.3	31	46
Maximum	21700.0	1.0	18.7	118	1.20	1.30	43.6	13.0	34.9	32800.0	25.5	1200	0.17	30.4	0.68	1.4	70	85
Mean	12826.7	0.3	9.5	70	0.40	0.33	23.6	8.9	15.0	21497.3	18.2	529	0.04	15.0	0.30	0.6	35	47
SD	4740.2	0.2	3.9	33	0.35	0.43	10.4	3.3	7.6	6864.7	4.2	347	0.05	7.3	0.18	0.4	15	18
RSD	37%	73%	41%	46%	87%	131%	44%	38%	51%	32%	23%	66%	111%	49%	61%	69%	43%	38%
Bootstrap 95% UCL	14805	0.44	11.3	83.8	0.57	0.55	28.2	10.0	18.9	24368	20.0	676	0.07	18.3	0.40	0.84	41.8	54.8
Notes:																		
1. Concentrations for Sample IDs with * represent average of duplicate samples.																		
2. Concentrations for nondetects (U-qualified data) are 0.5 the quantitation limits.																		
3. Highlighted values are outside the interval from Q ₂₅ -1.5(IQR) to Q ₇₅ +1.5(IQR) and could be considered statistical outliers.																		
SD - Standard Deviation																		
RSD - Relative Standard Deviation																		

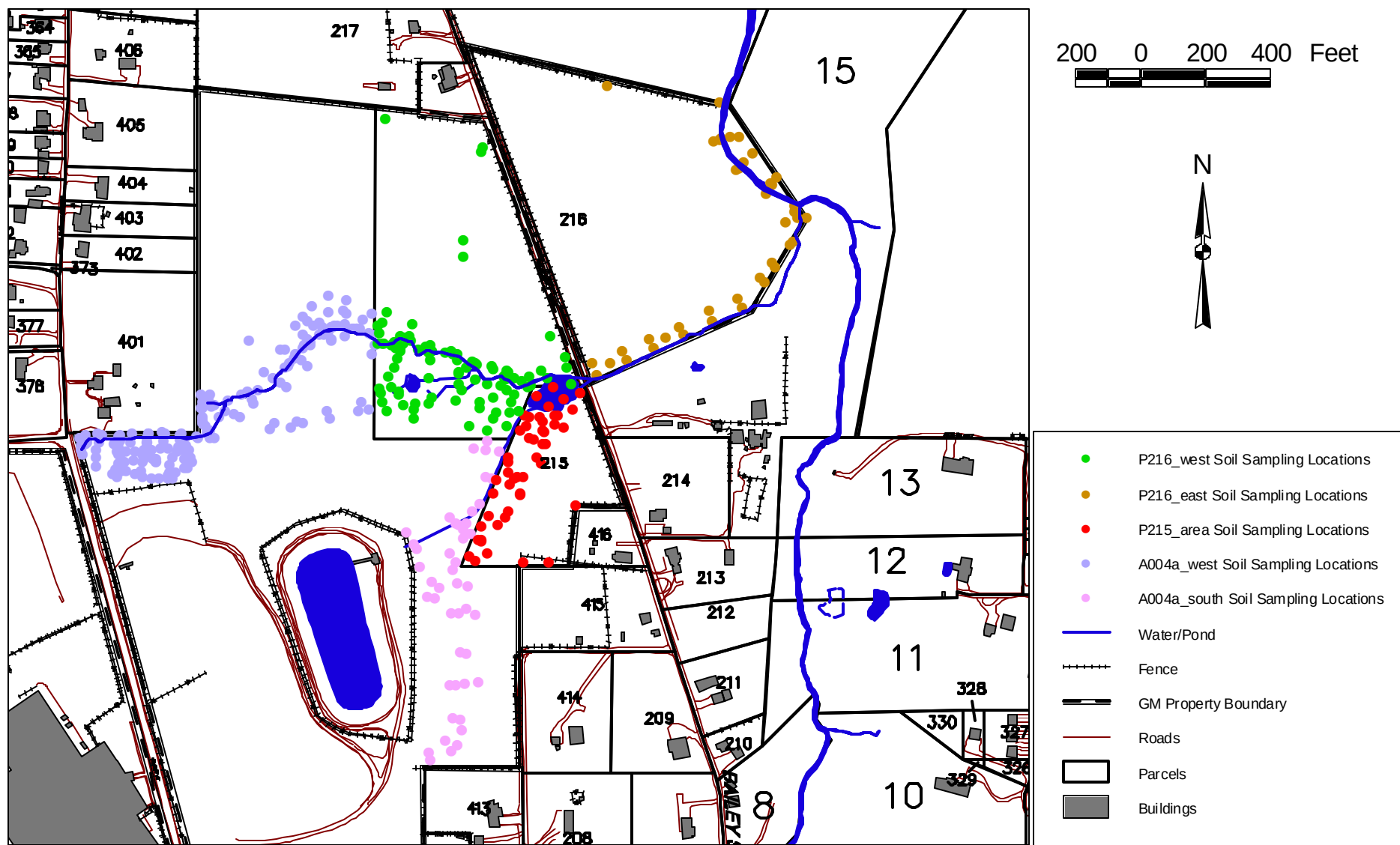
**Attachment B.1: Cancer Risks and Hazard Quotients for Background Metals in Soil
Bedford, Indiana**

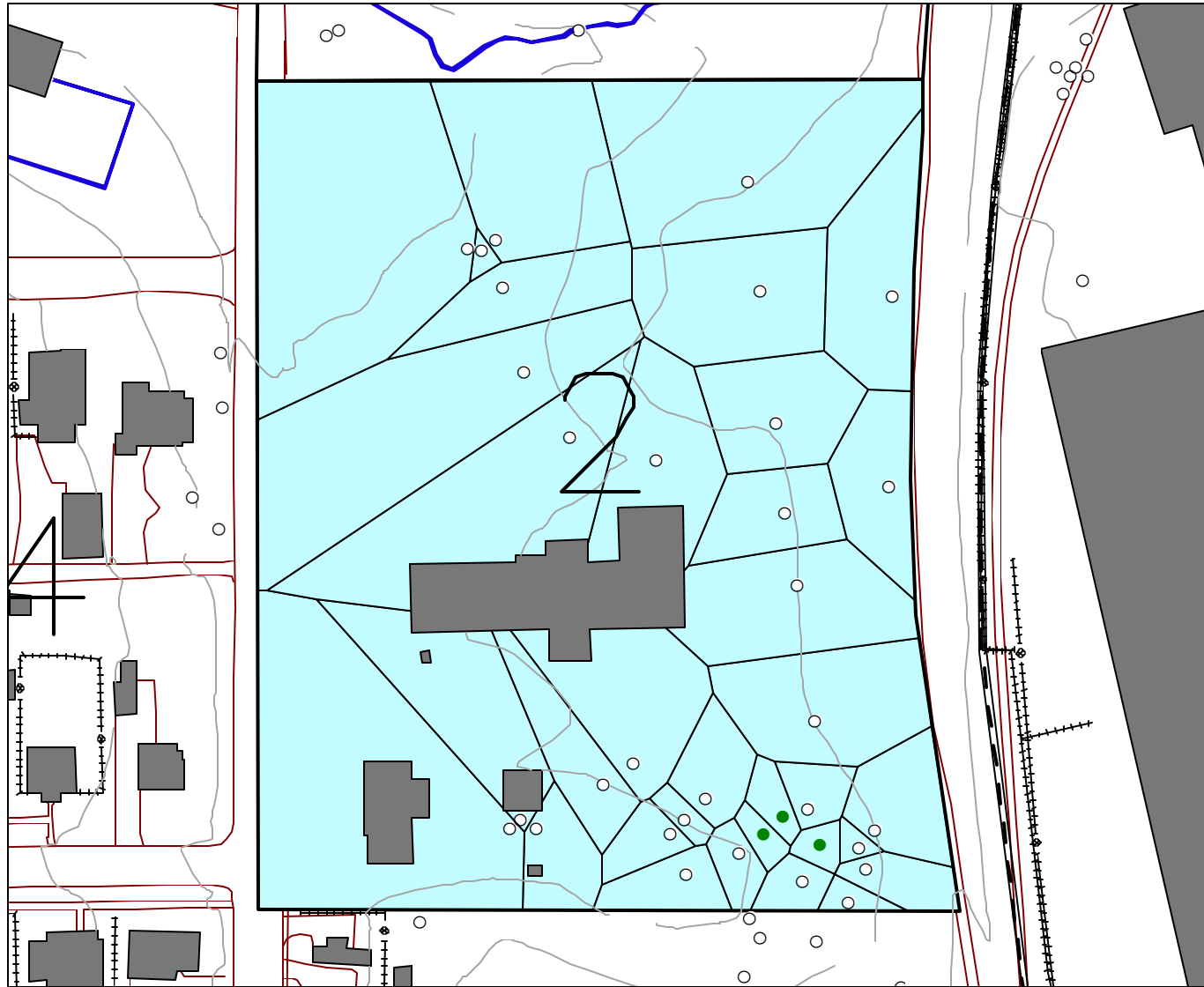
Chem Group	Chemical	CASRN	Carc Class	Conc in Soil ¹ (mg/kg)	Industrial Soil Contact Criteria at Cancer Risk of 10-5 (mg/kg)	Industrial Soil Contact Criteria at HQ of 1 (mg/kg)	Residential Soil Contact Criteria at Cancer Risk of 10-5 (mg/kg)	Residential Soil Contact Criteria at HQ of 1 (mg/kg)	Industrial Soil Contact Cancer Risk	Industrial Soil Contact HQ	Residential Soil Contact Cancer Risk	Residential Soil Contact HQ
INORG	Aluminum	7429-90-5	D	1.48E+04		1.9E+06		2.7E+05		7.7E-03		5.4E-02
INORG	Antimony	7440-36-0		4.40E-01		8.2E+02		1.1E+02		5.4E-04		4.0E-03
INORG	Arsenic	7440-38-2	A	1.13E+01	2.7E+01	4.4E+02	3.9E+00	7.5E+01	4.1E-06	2.6E-02	2.9E-05	1.5E-01
INORG	Barium	7440-39-3	D	8.38E+01		1.4E+05		1.9E+04		5.9E-04		4.4E-03
INORG	Beryllium	7440-41-7	B1	5.70E-01	7.3E+04	4.0E+03	3.2E+04	5.5E+02	7.8E-11	1.4E-04	1.8E-10	1.0E-03
INORG	Cadmium	7440-43-9	B1	5.52E-01	9.7E+04	1.3E+03	4.2E+04	2.4E+02	5.7E-11	4.1E-04	1.3E-10	2.3E-03
INORG	Chromium (total)	7440-47-3		2.82E+01	1.5E+04	6.1E+03	6.4E+03	8.2E+02	1.9E-08	4.6E-03	4.4E-08	3.4E-02
INORG	Cobalt	7440-48-4	B1	1.00E+01	6.2E+04	3.1E+04	2.7E+04	5.4E+03	1.6E-09	3.3E-04	3.7E-09	1.8E-03
INORG	Copper	7440-50-8	D	1.89E+01		8.2E+04		1.1E+04		2.3E-04		1.7E-03
INORG	Iron	7439-89-6	D	2.44E+04		6.1E+05		8.2E+04		4.0E-02		3.0E-01
INORG	Lead	7439-92-1	B2	2.00E+01								
INORG	Manganese	7439-96-5	D	6.76E+02		1.5E+05		3.8E+04		4.5E-03		1.8E-02
INORG	Mercury	7439-97-6	D	7.05E-02		8.7E+01		4.0E+01		8.1E-04		1.8E-03
INORG	Nickel	7440-02-0	A	1.83E+01	7.3E+05	4.1E+04	3.2E+05	5.5E+03	2.5E-10	4.5E-04	5.7E-10	3.3E-03
INORG	Selenium	7782-49-2	D	3.96E-01		1.0E+04		1.4E+03		3.9E-05		2.9E-04
INORG	Silver	7440-22-4	D			8.8E+03		1.4E+03				
INORG	Thallium	7440-28-0		8.40E-01		1.4E+02		1.9E+01		5.9E-03		4.4E-02
INORG	Vanadium	7440-62-2		4.18E+01		1.4E+04		1.9E+03		2.9E-03		2.2E-02
INORG	Zinc	7440-66-6	D	5.48E+01		6.1E+05		8.2E+04		8.9E-05		6.7E-04
								Sum	4E-06	9E-02	3E-05	6E-01
Notes:												
1	The values are the bootstrap 95% UCL background metal concentrations in the previous table.											
2	Only metals analyzed for in background samples are shown.											
3	Lead is evaluated using USEPA criterion based on blood-lead modeling, and therefore has no cancer or HQ calculation.											

A T T A C H M E N T B . 2

Areas Used in Exposure Concentration Calculations







60 0 60 120 Feet



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

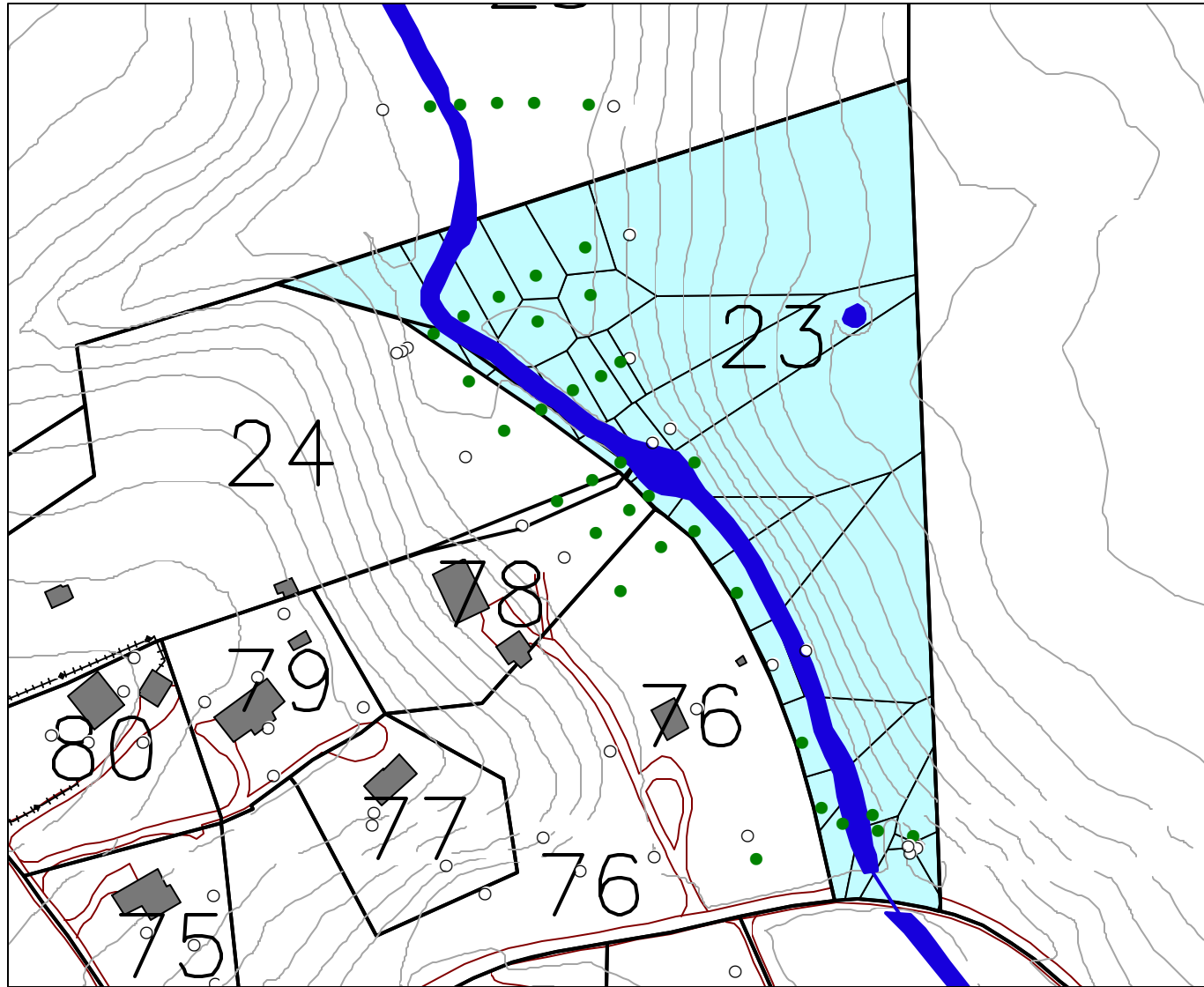
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 2 (Occupied) Bedford, Indiana

Attachment
B.2

Arcview Plot



100 0 100 200 Feet

N

PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

--- Fence

— Roads

Thiessen Polygons

Parcels

Buildings

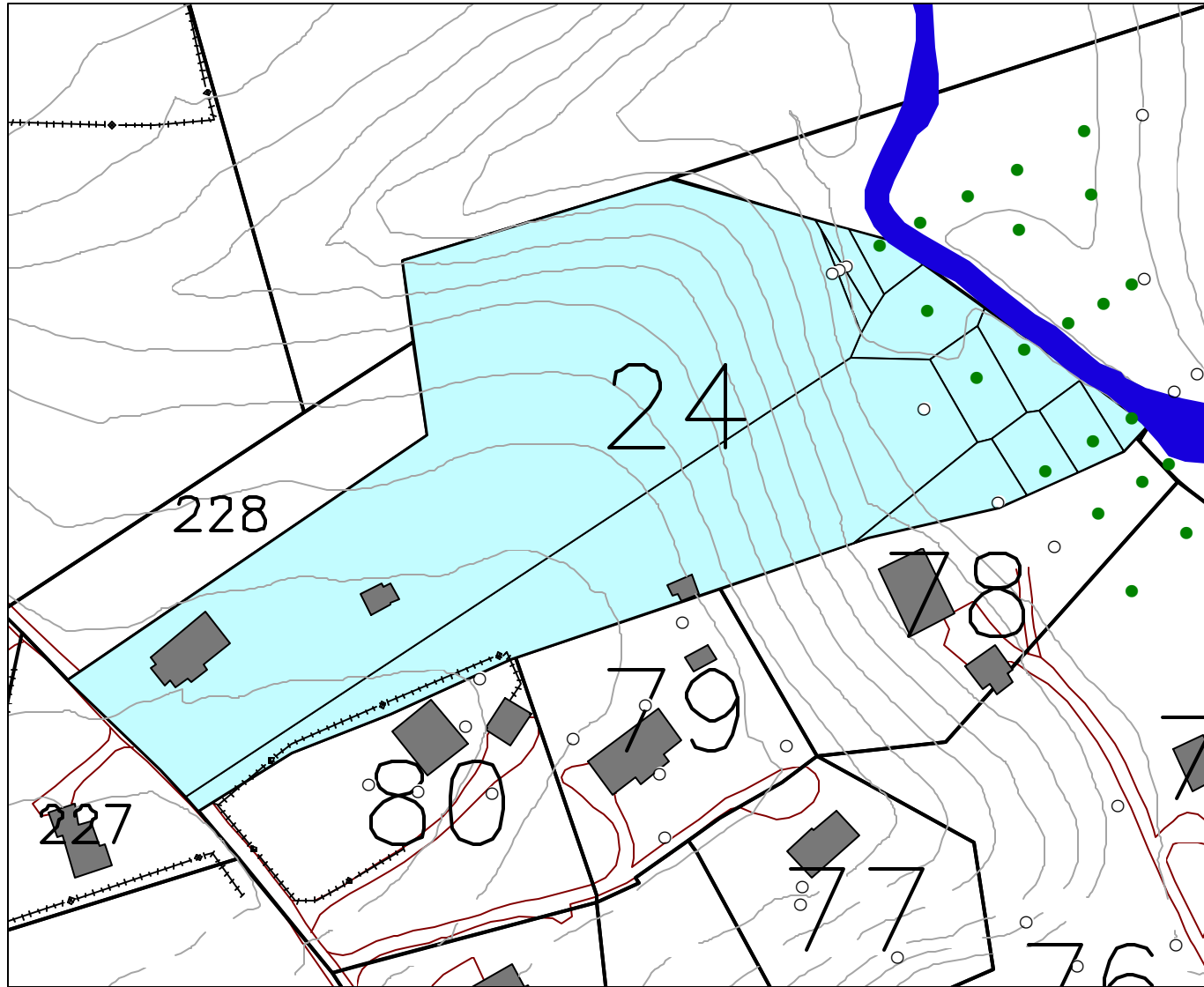
ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 23 (Vacant)
Bedford, Indiana

Attachment
B.2

Arcview Plot



90 0 90 180 Feet



PCBs Surface Soil Sample Locations

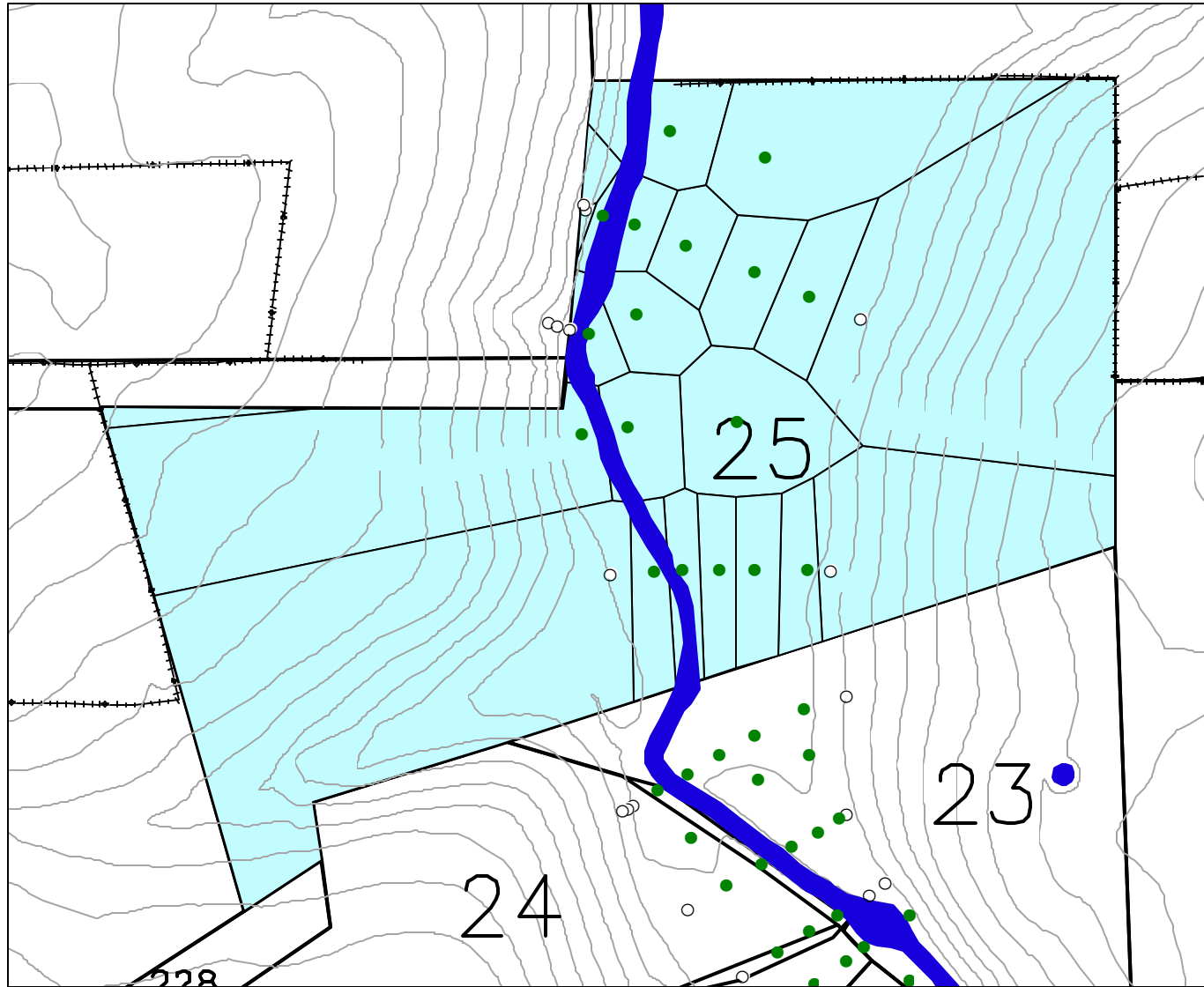
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- - - Fence
- Roads
- Thiessen Polygons
- Parcels
- Buildings

ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 24 (Occupied)
Bedford, Indiana

Attachment
B.2
Arcview Plot



100 0 100 200 Feet

N

PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcels

Buildings

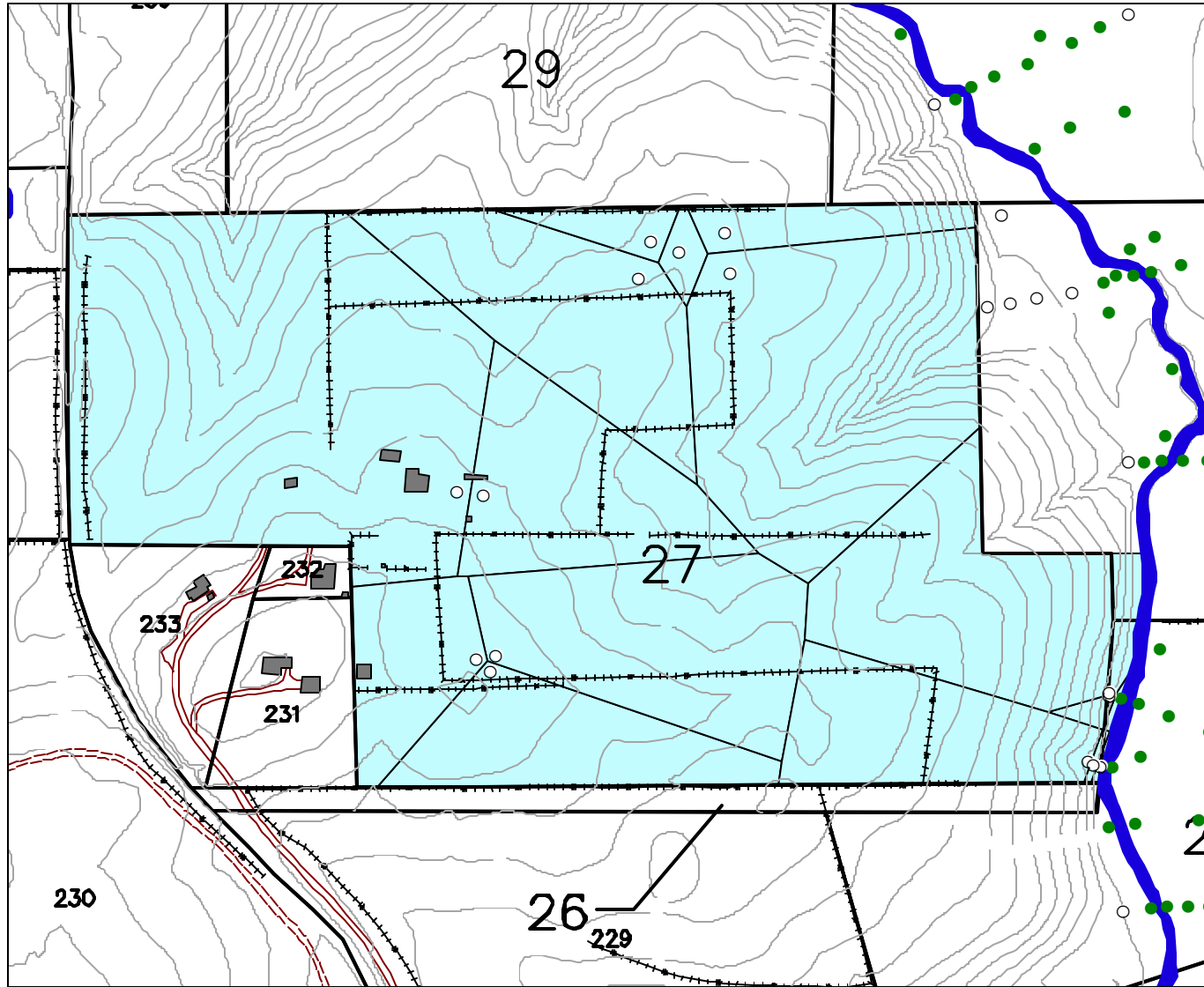
ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 25 (Vacant)
Bedford, Indiana

Attachment
B.2

Arcview Plot



200 0 200 400 Feet



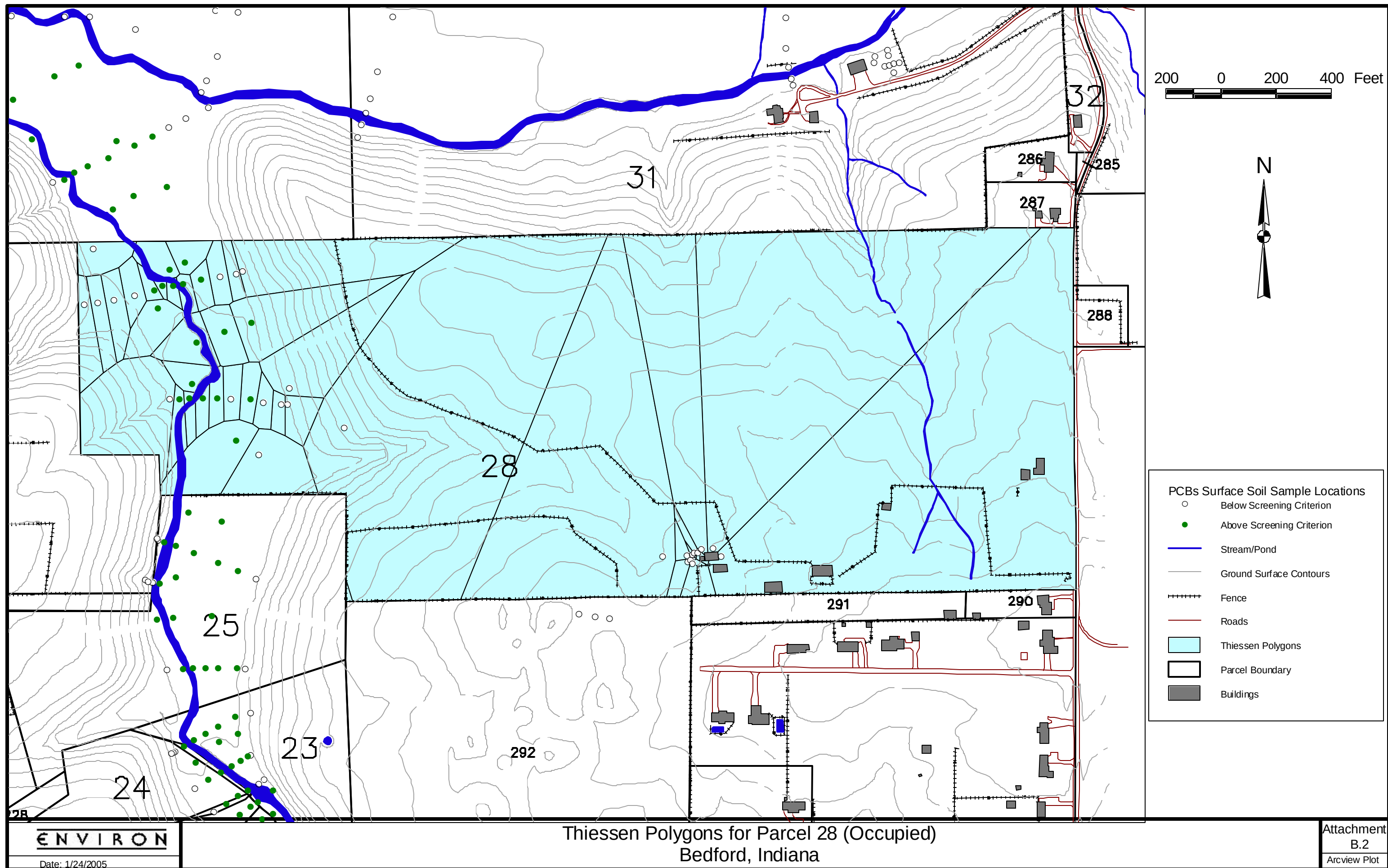
- PCBs Surface Soil Sample Locations
- Below Screening Criterion
 - Above Screening Criterion
 - Stream/Pond
 - Ground Surface Contours
 - ++++ Fence
 - Roads
 - Thiessen Polygons
 - Parcel Boundary
 - Buildings

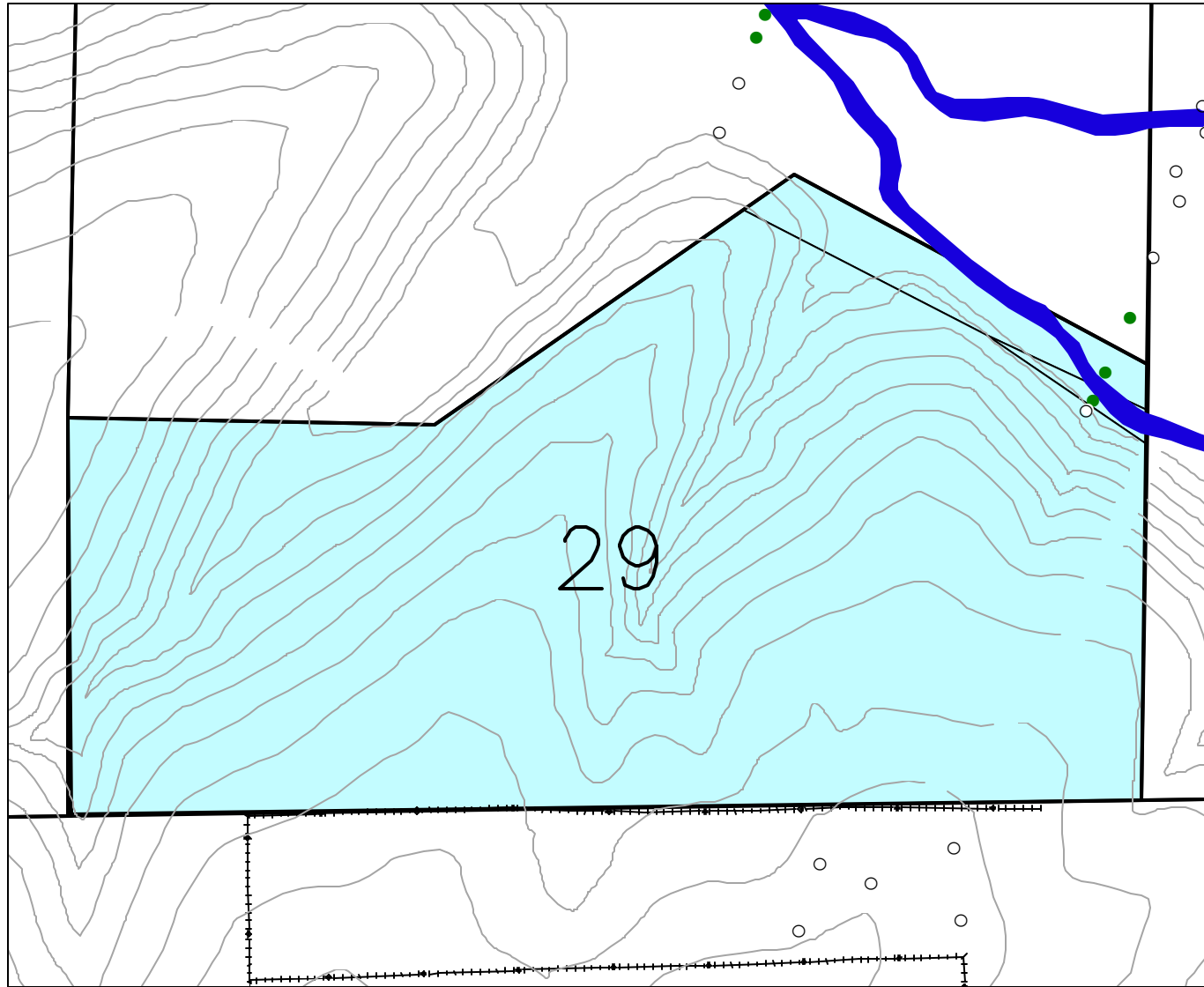
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 27 (Vacant)
Bedford, Indiana

Attachment
B.2
Arcview Plot





100 0 100 200 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

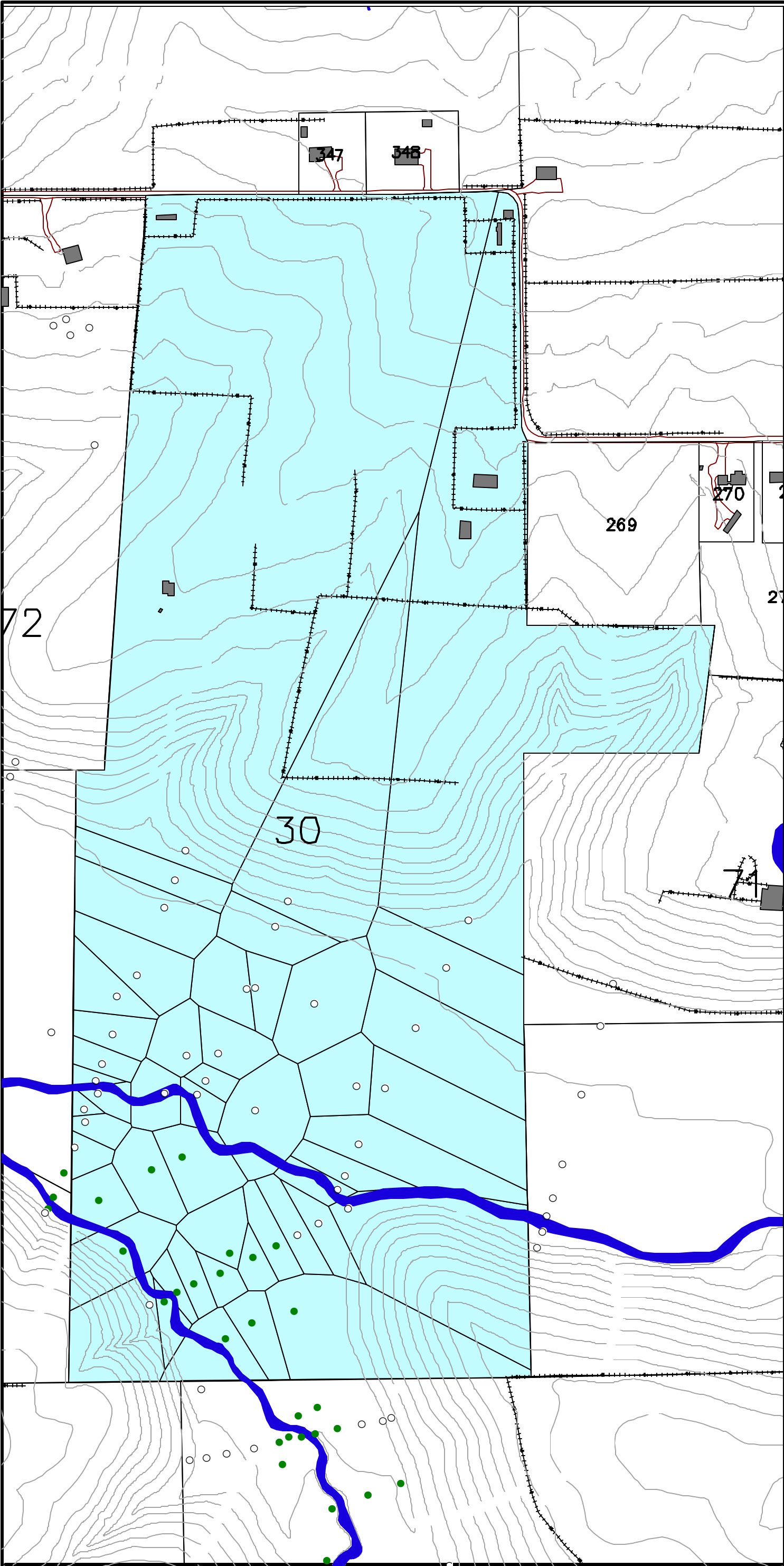
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 29 (Vacant) Bedford, Indiana

Attachment
B.2

Arcview Plot



100 0 100 200 Feet

N

PCBs Surface Soil Sample Locations

- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcel Boundary
- Buildings

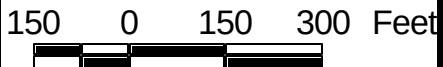
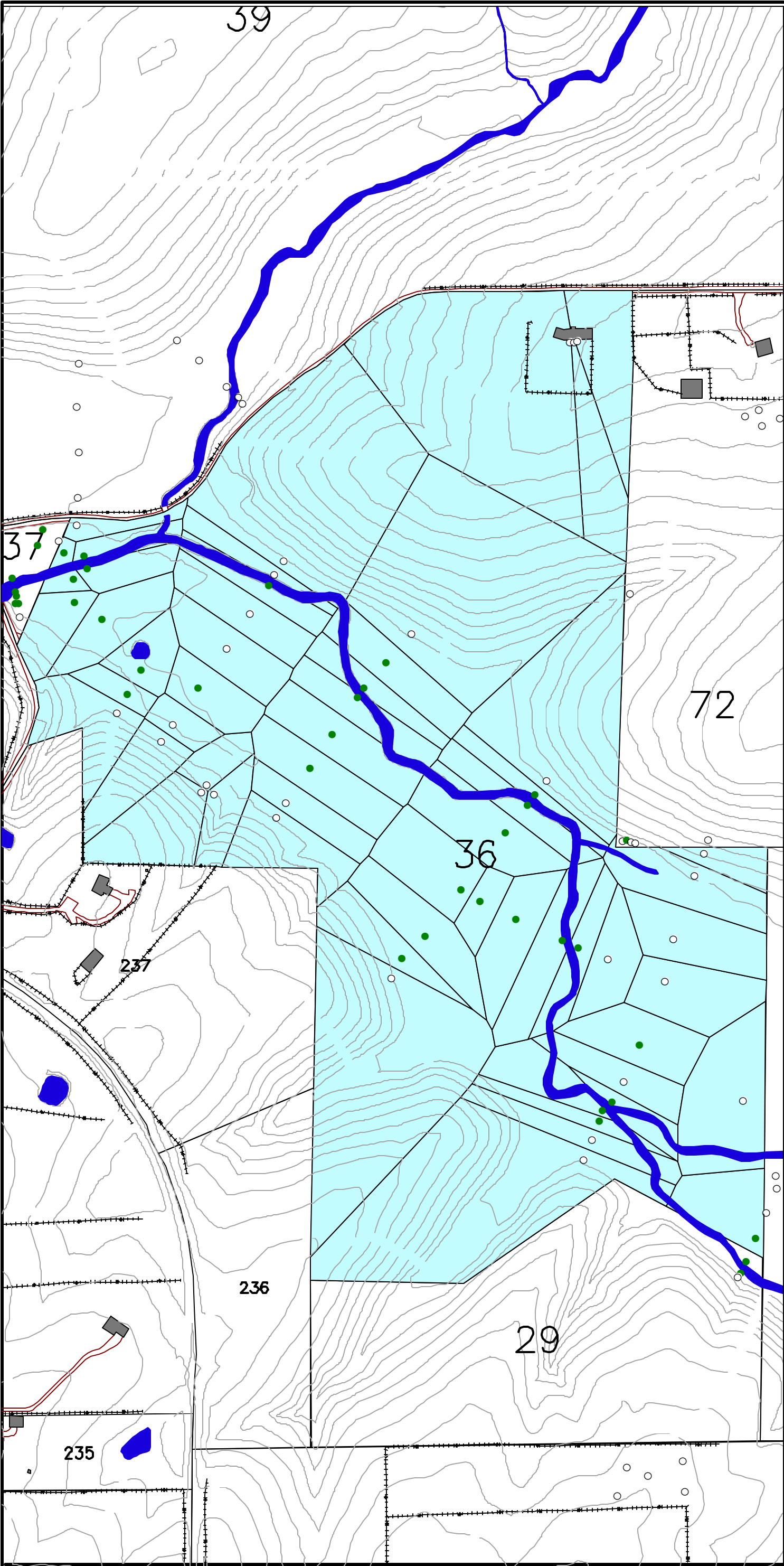
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 30 (Occupied)
Bedford, Indiana

Attachment
B.2

Arcview Plot



N



PCBs Surface Soil Sample Locations

- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcel Boundary
- Buildings

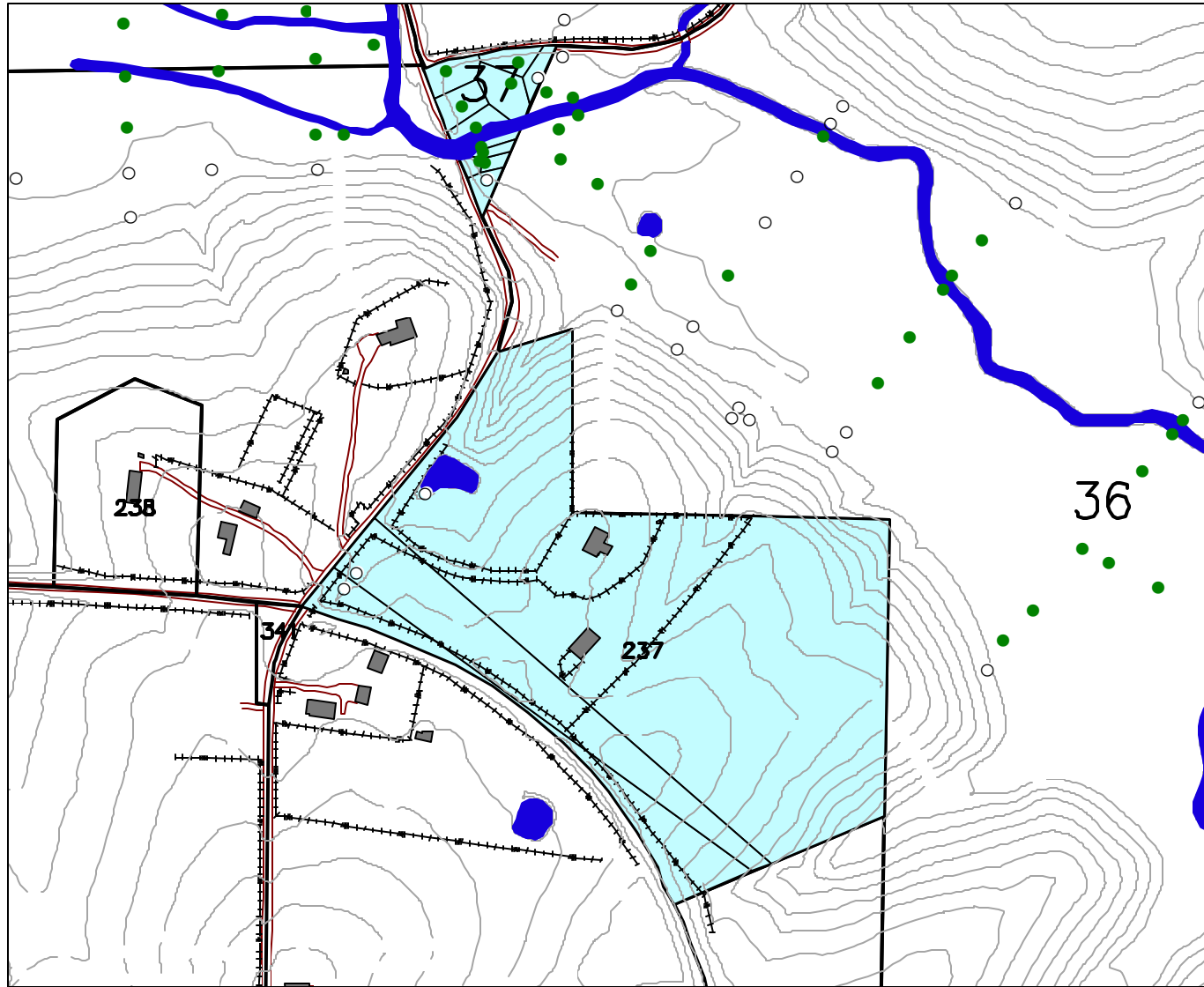
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 36 (Occupied)
Bedford, Indiana

Attachment
B.2

Arcview Plot



200 0 200 400 Feet



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

— Fence

— Roads

Thiessen Polygons

Parcels

Buildings

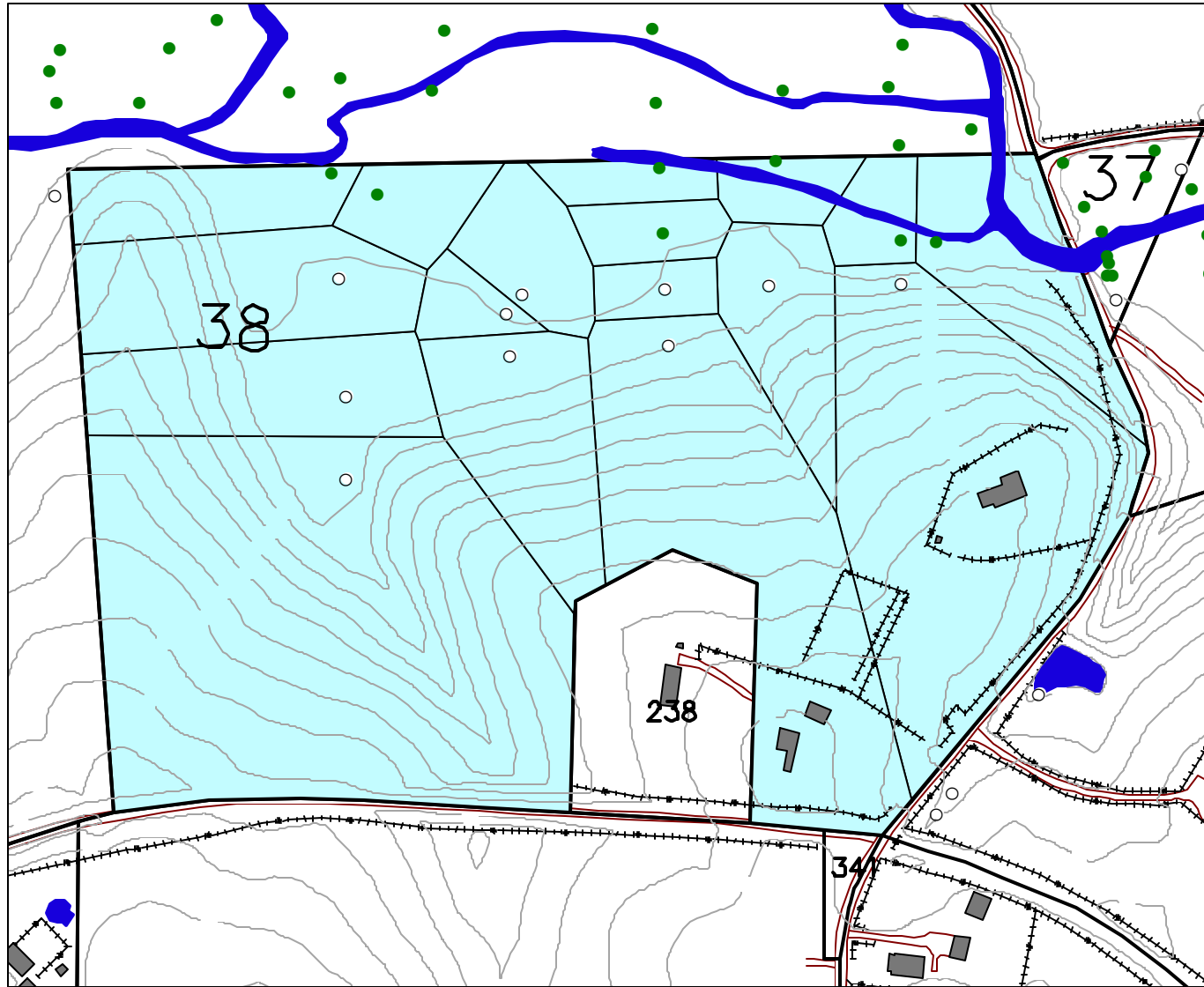
ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 37/237 (Vacant)
Bedford, Indiana

Attachment
B.2

Arcview Plot



100 0 100 200 Feet



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

--- Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

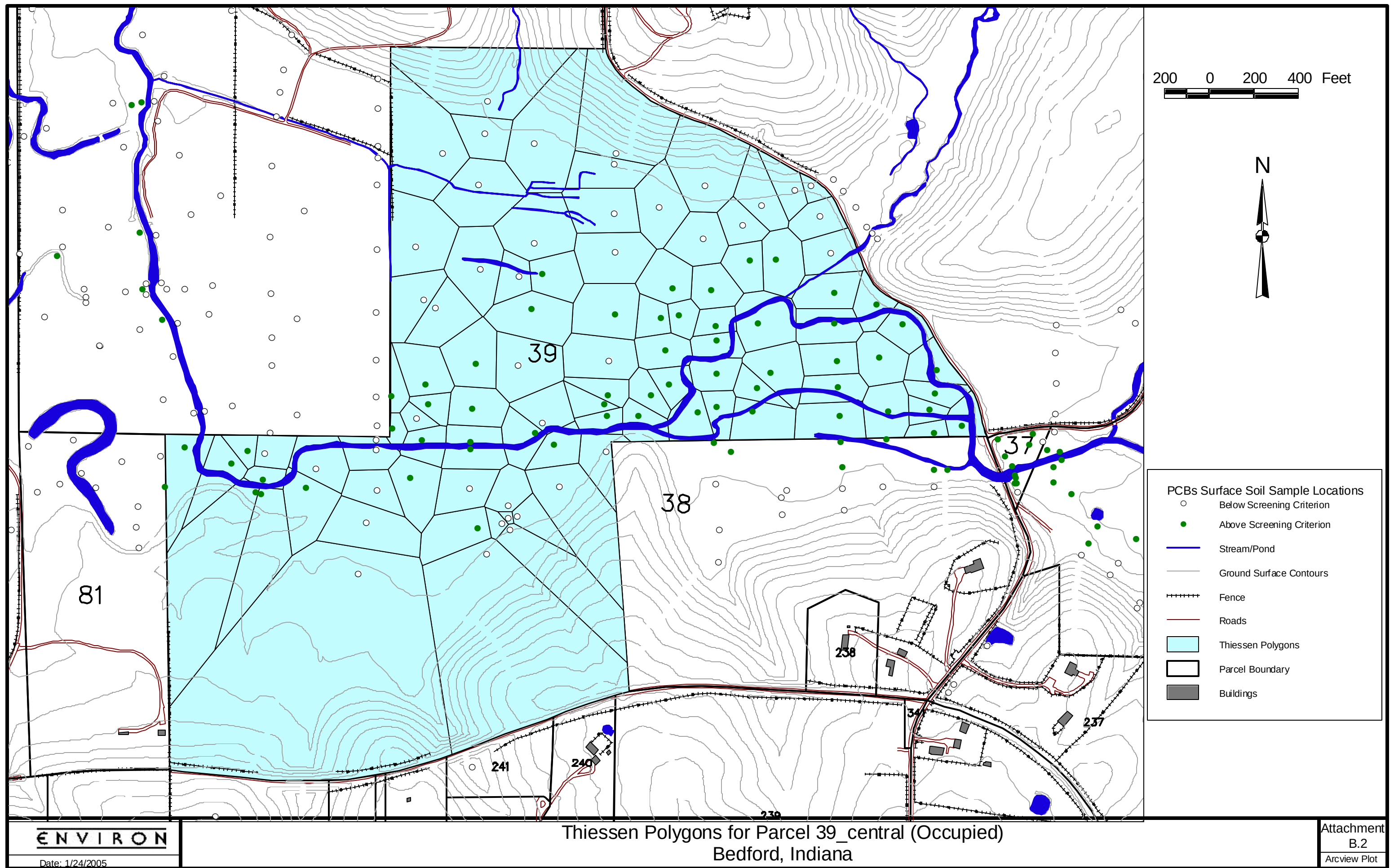
ENVIRON

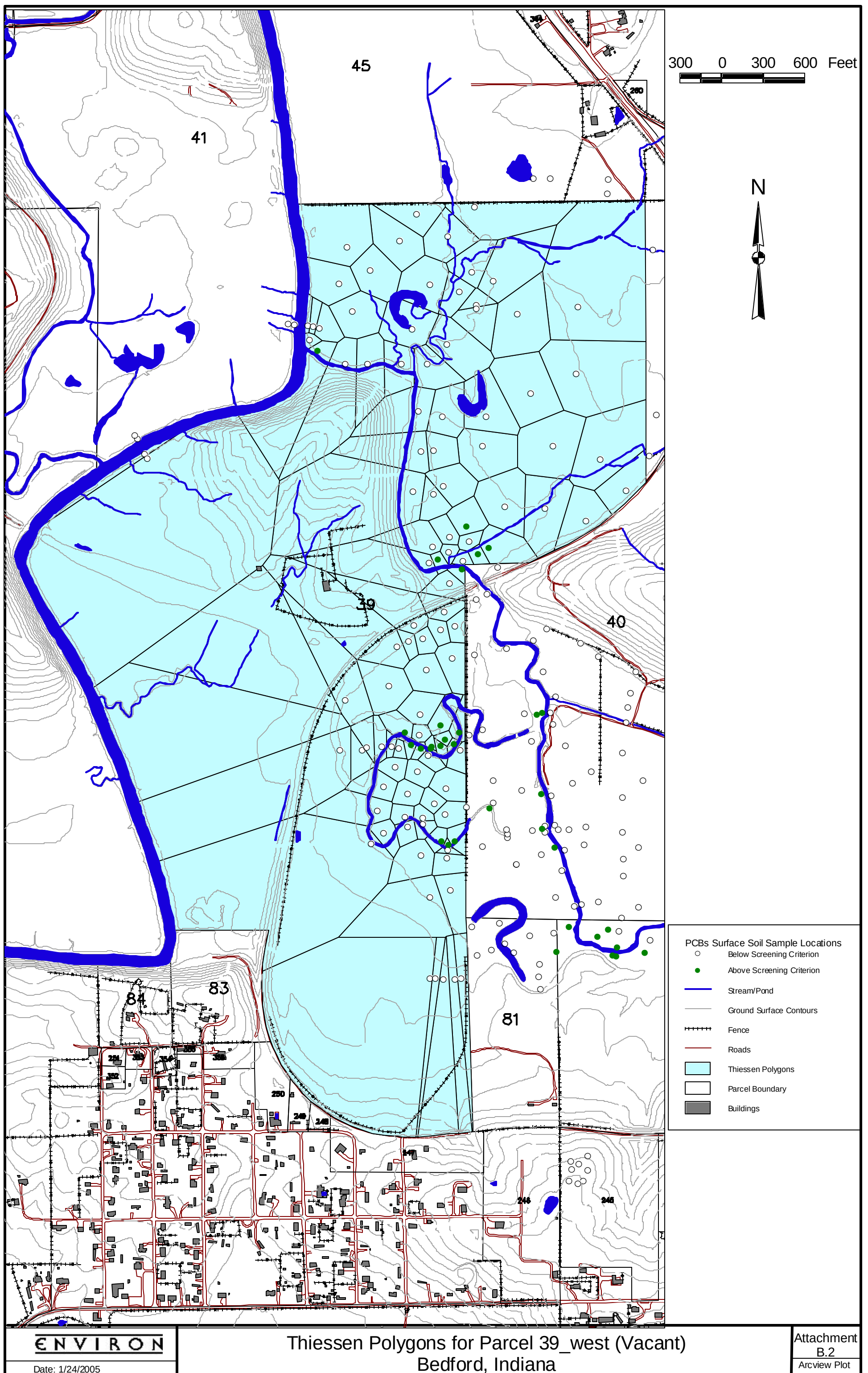
Date: 1/24/2005

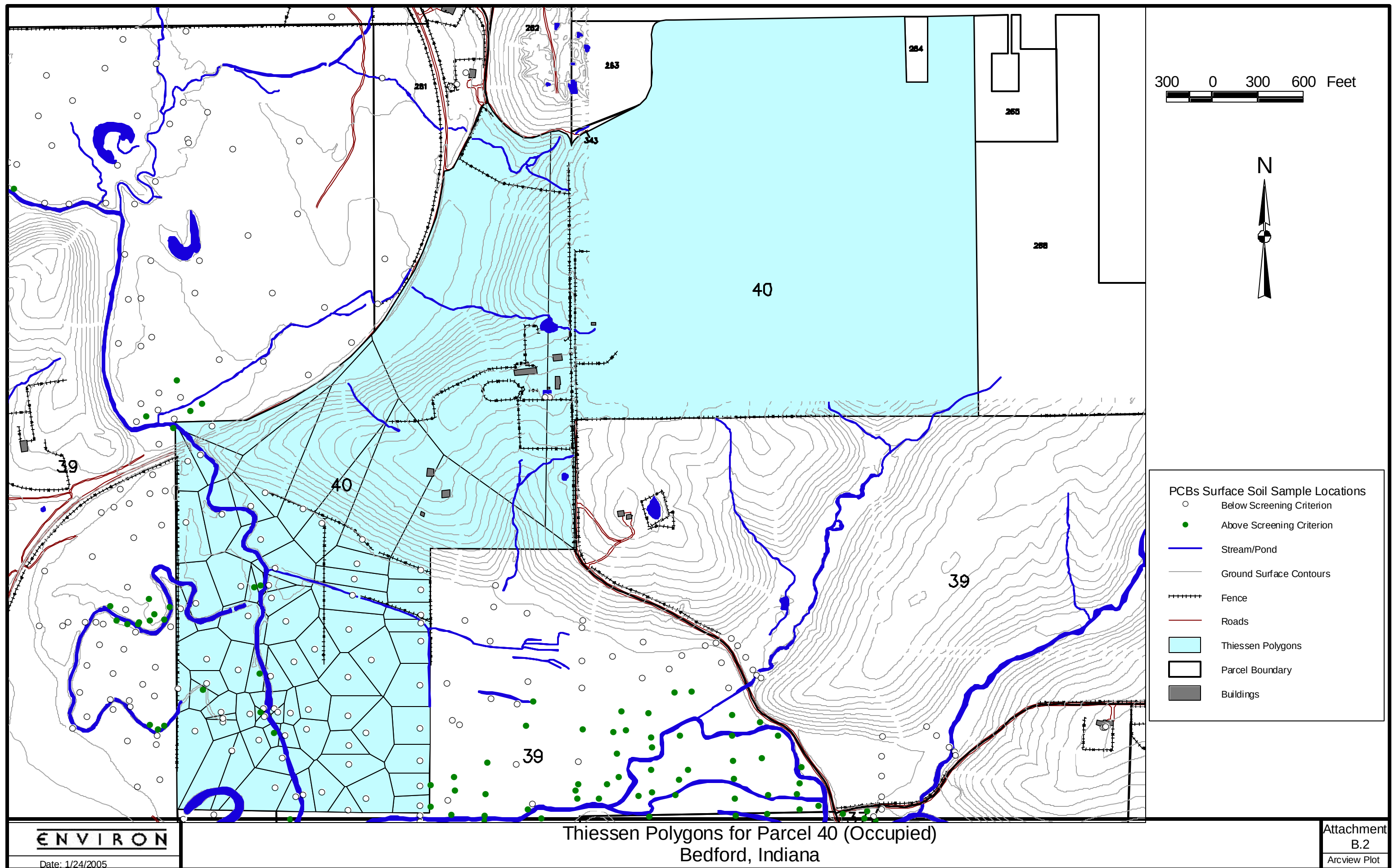
Thiessen Polygons for Parcel 38 (Vacant)
Bedford, Indiana

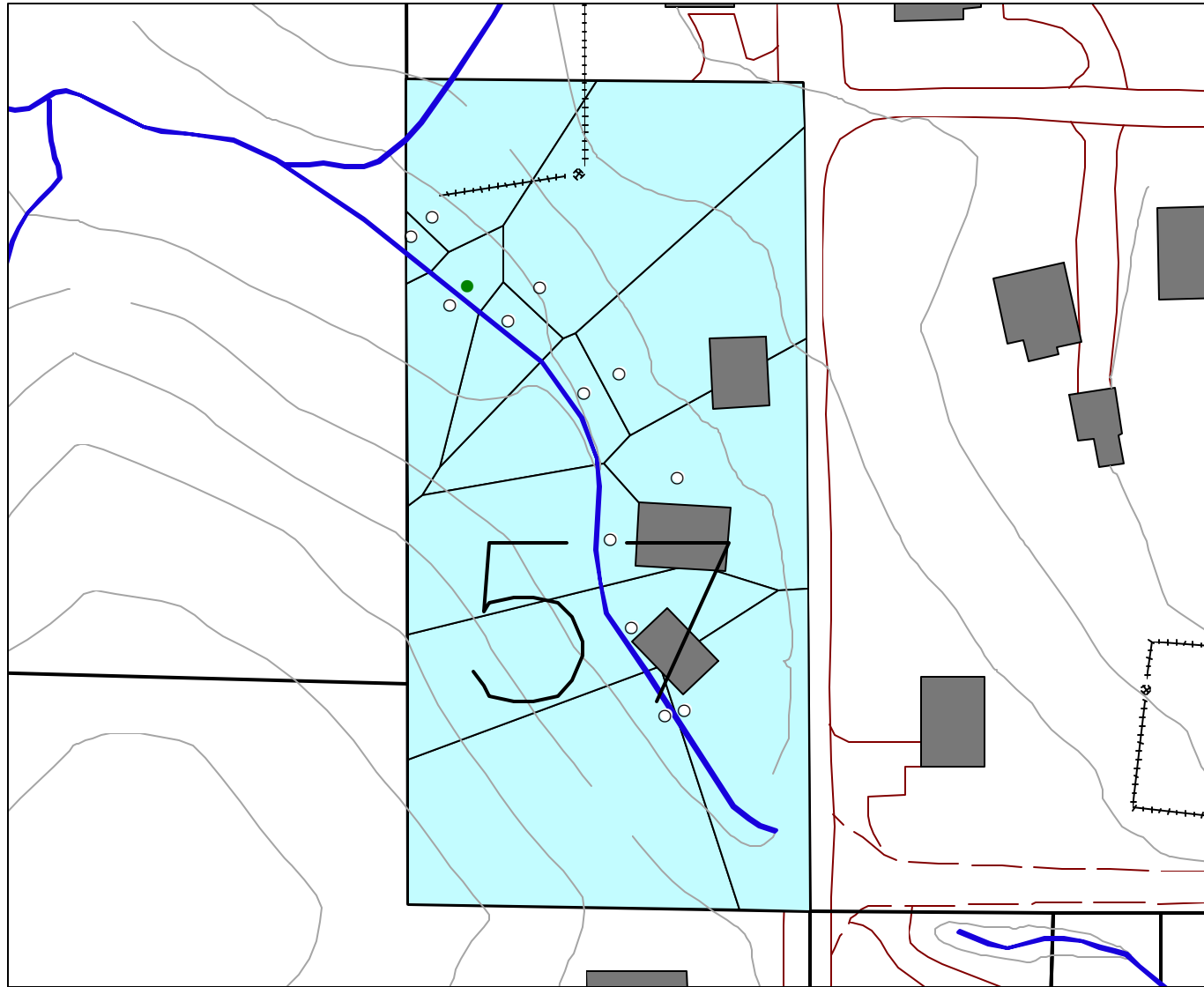
Attachment
B.2

Arcview Plot









40 0 40 80 Feet



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

--- Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

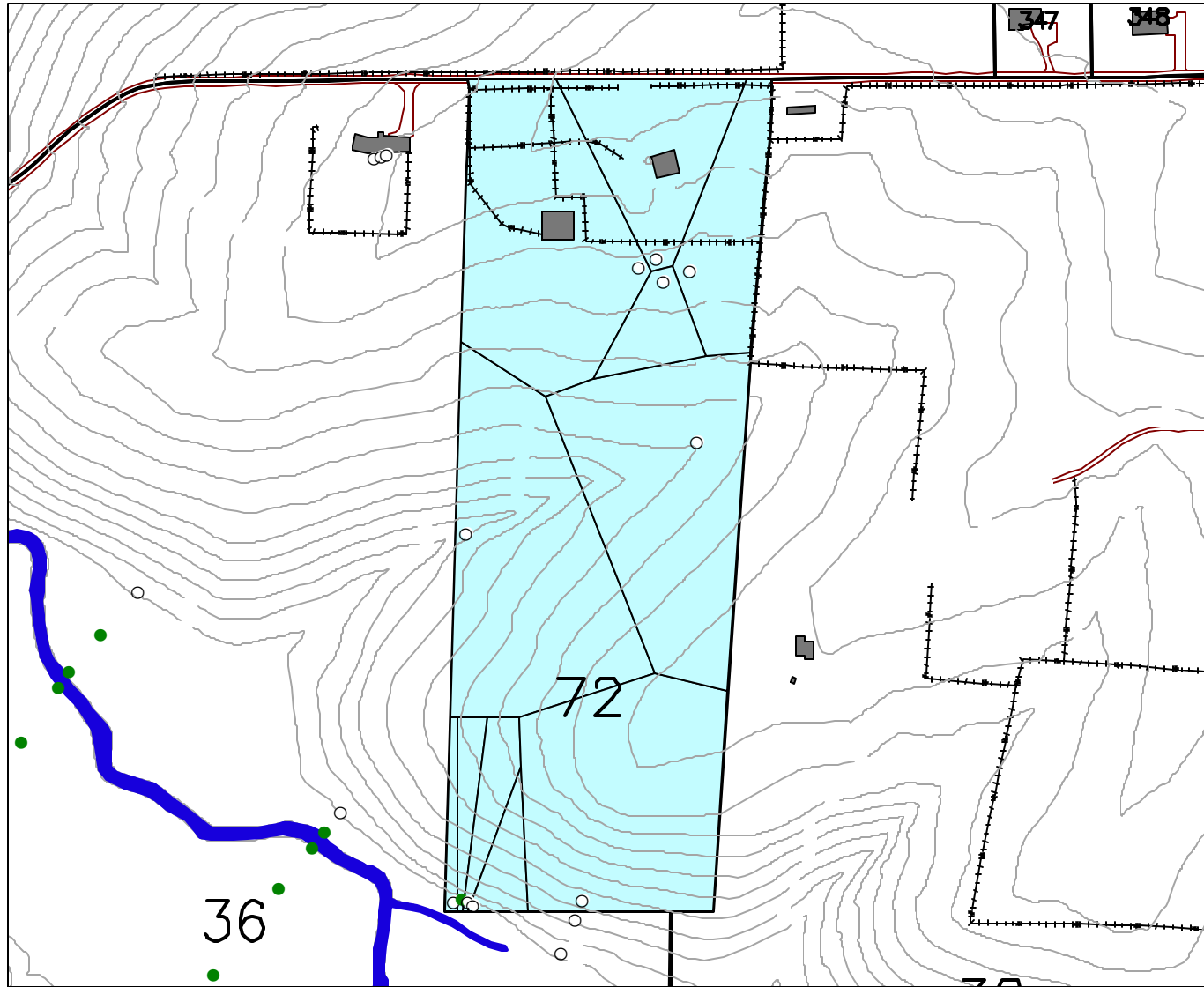
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 57 (Occupied)
Bedford, Indiana

Attachment
B.2

Arcview Plot



200 0 200 400 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcels

Buildings

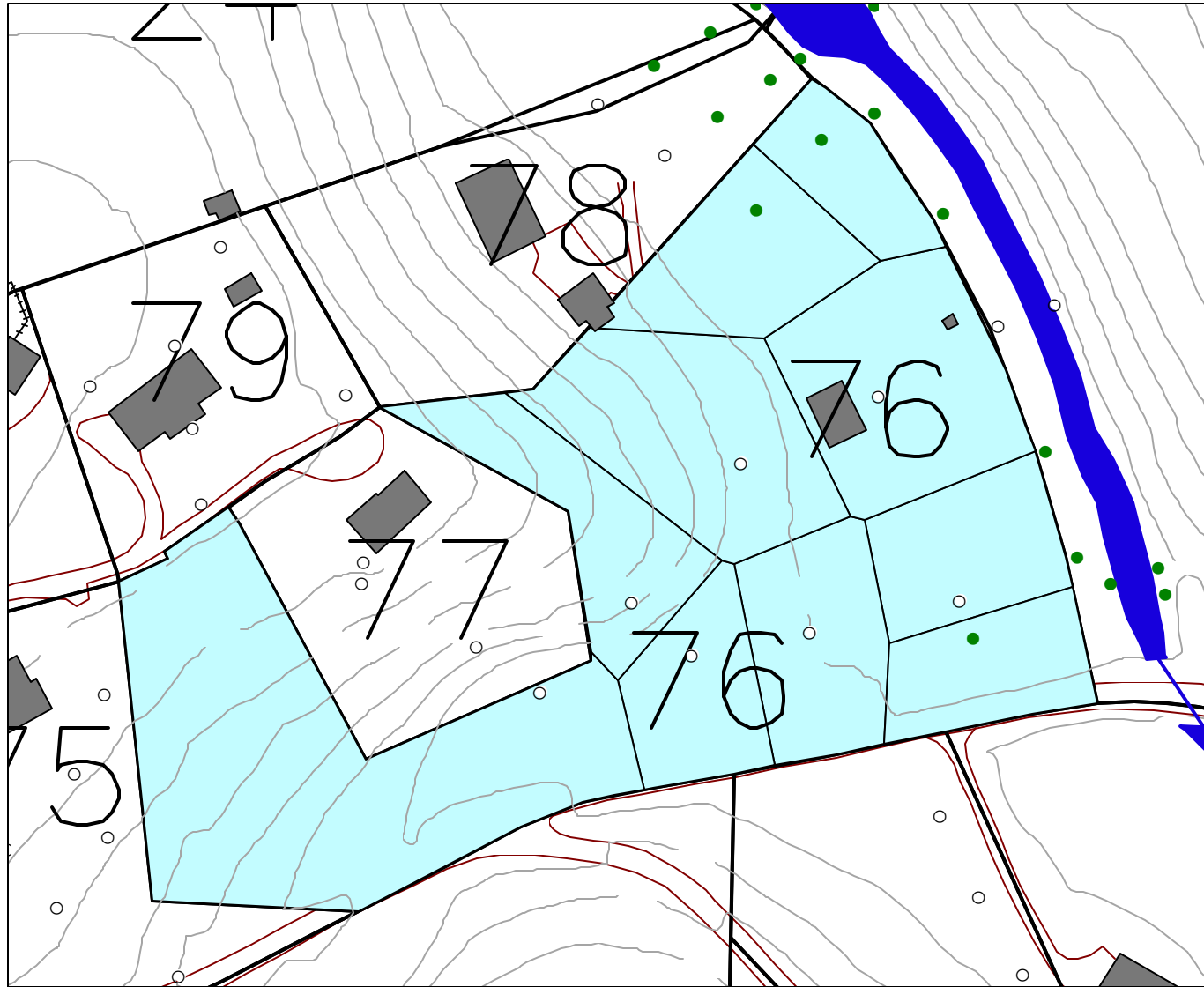
ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 72 (Occupied)
Bedford, Indiana

Attachment
B.2

Arcview Plot



80 0 80 160 Feet

N

PCBs Surface Soil Sample Locations

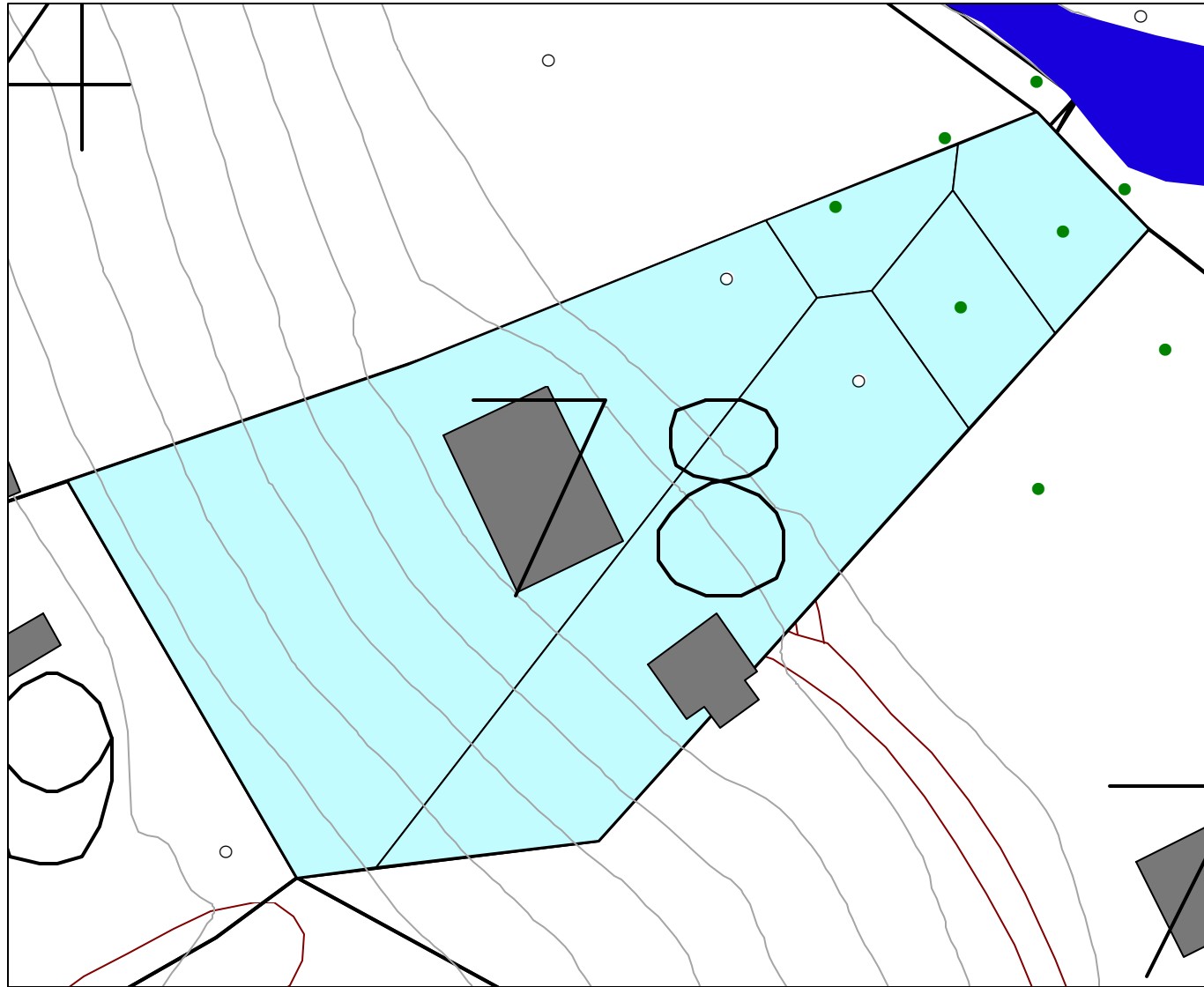
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcels
- Buildings

ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 76 GM(Vacant)
Bedford, Indiana

Attachment
B.2
Arcview Plot



40 0 40 80 Feet

N

PCBs Surface Soil Sample Locations

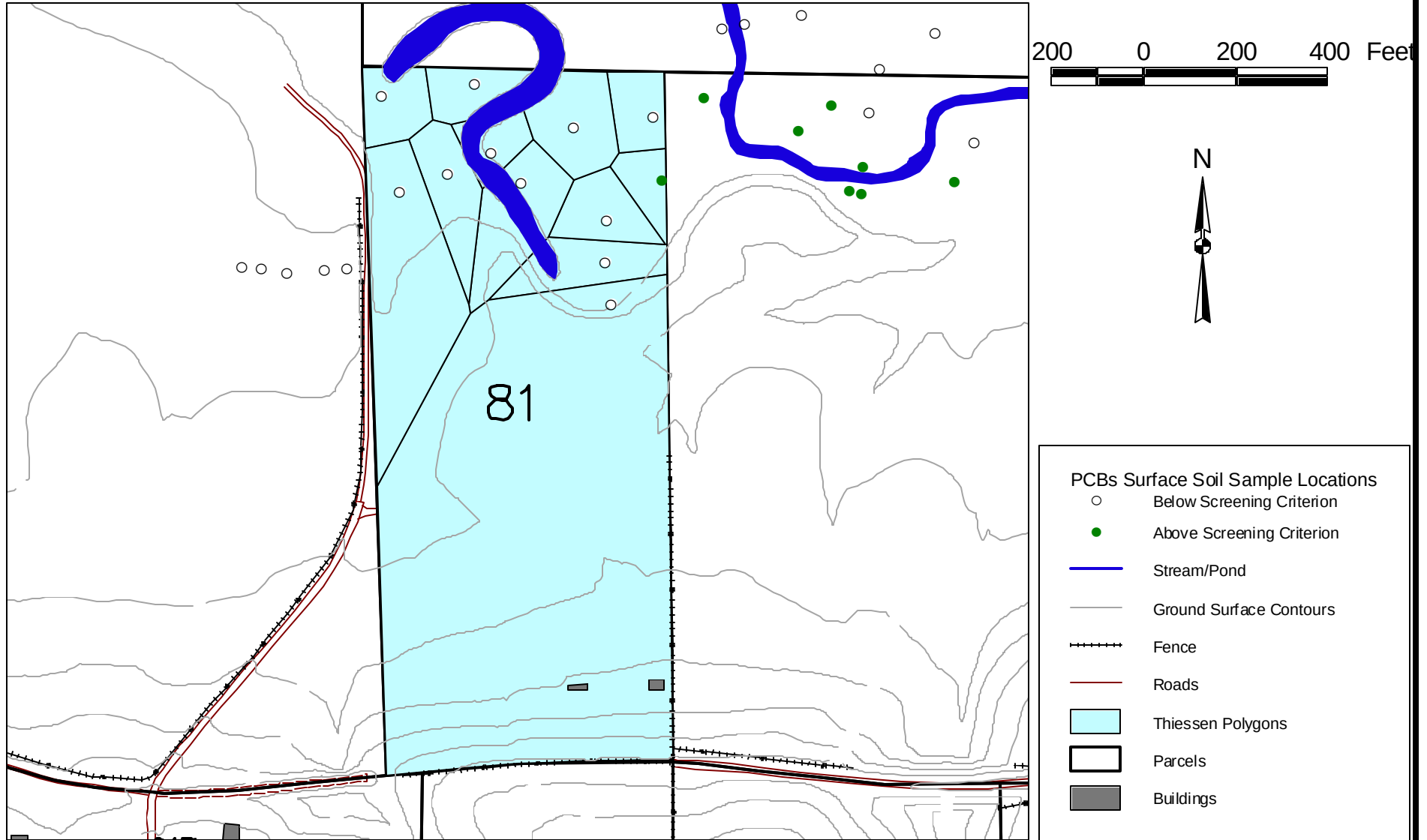
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- - - - - Fence
- Roads
- Thiessen Polygons
- Parcels
- Buildings

ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 78 (Vacant)
Bedford, Indiana

Attachment
B.2
Arcview Plot

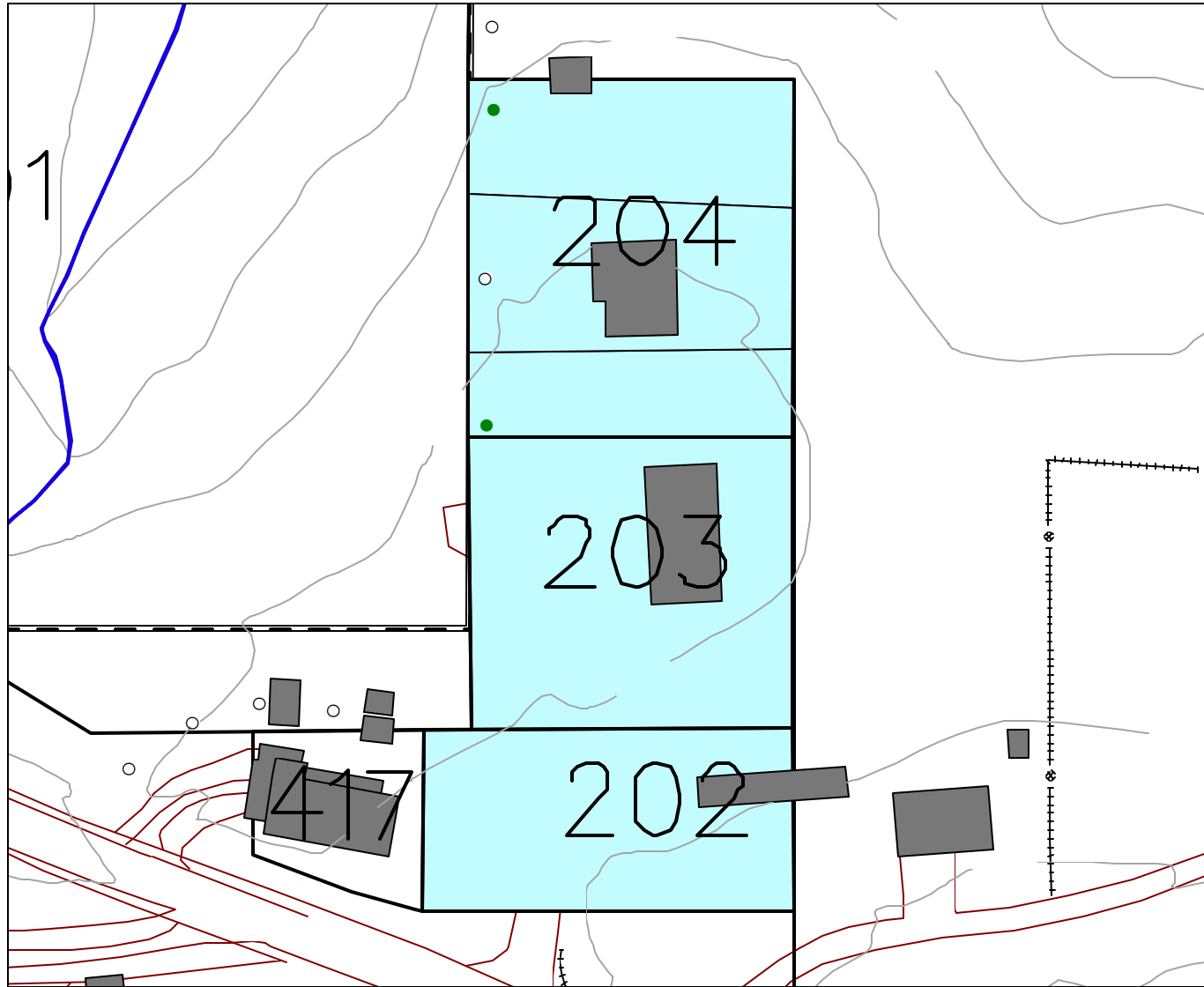


ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 81 (Occupied) Bedford, Indiana

Attachment
B.2
Arcview Plot



50 0 50 100 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

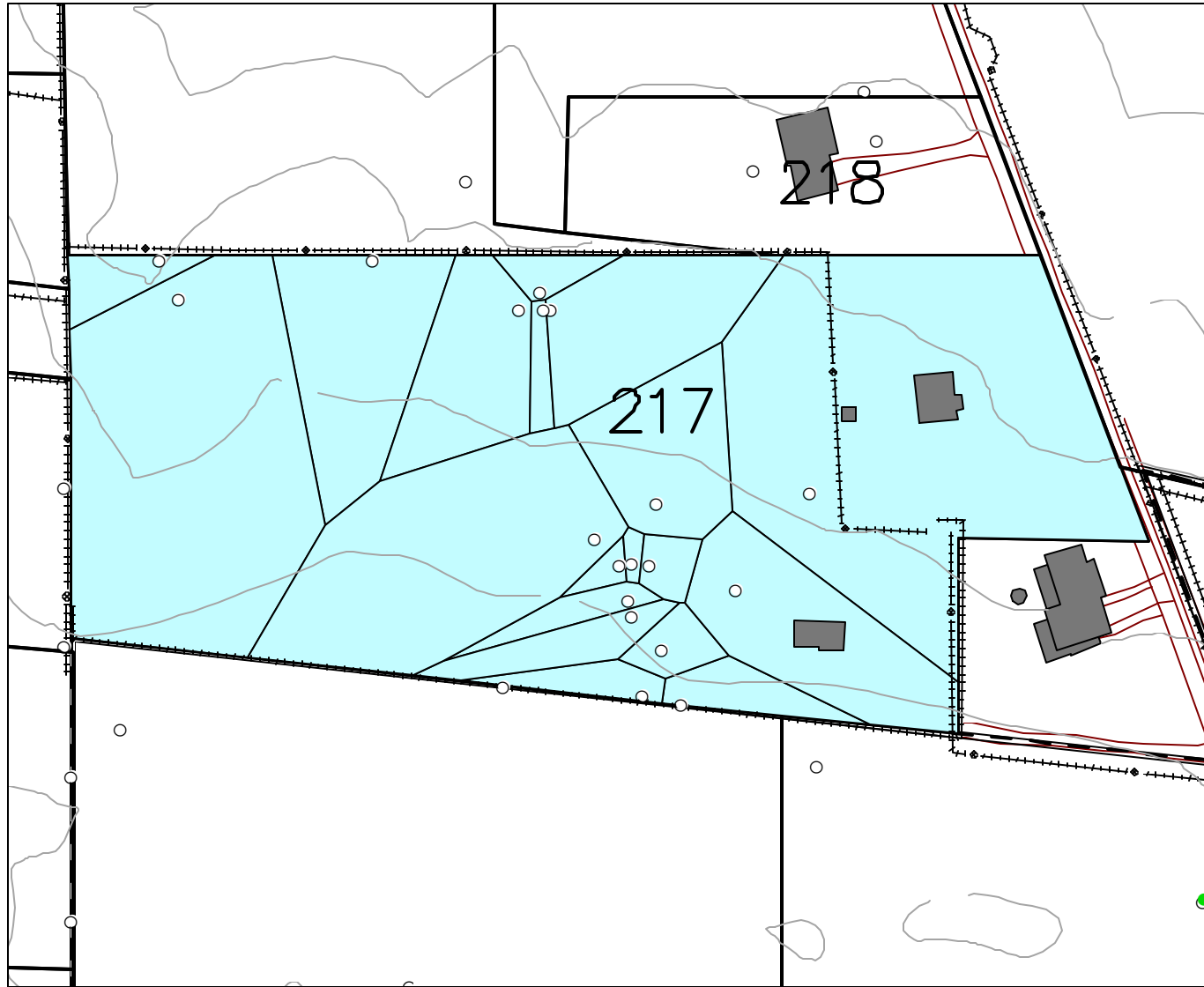
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 202/203/204 (Vacant)
Bedford, Indiana

Attachment
B.2

Arcview Plot



80 0 80 160 Feet



PCBs Surface Soil Sample Locations

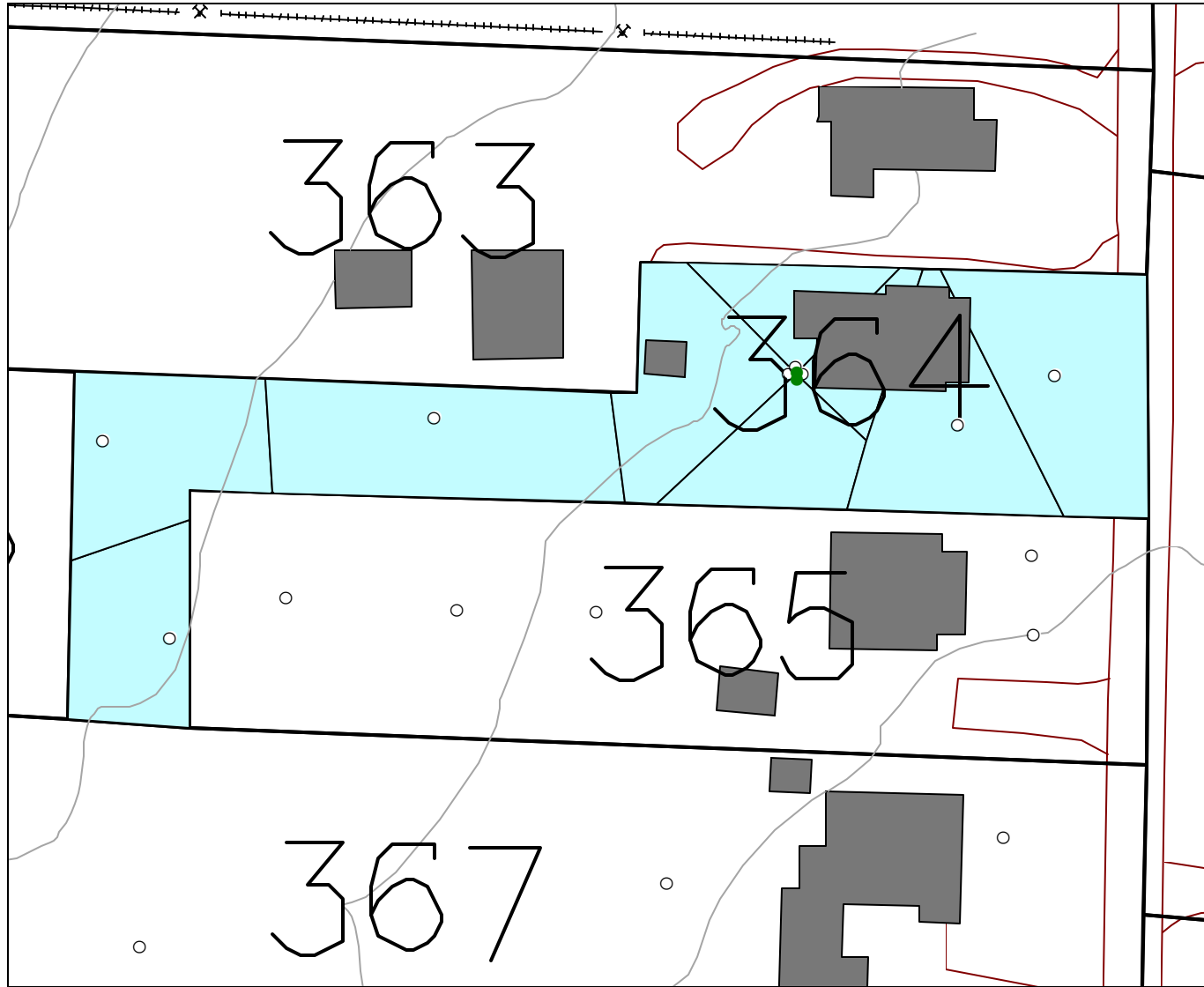
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcel Boundary
- Buildings

ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 217 (Vacant) Bedford, Indiana

Attachment
B.2
Arcview Plot



30 0 30 60 Feet



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

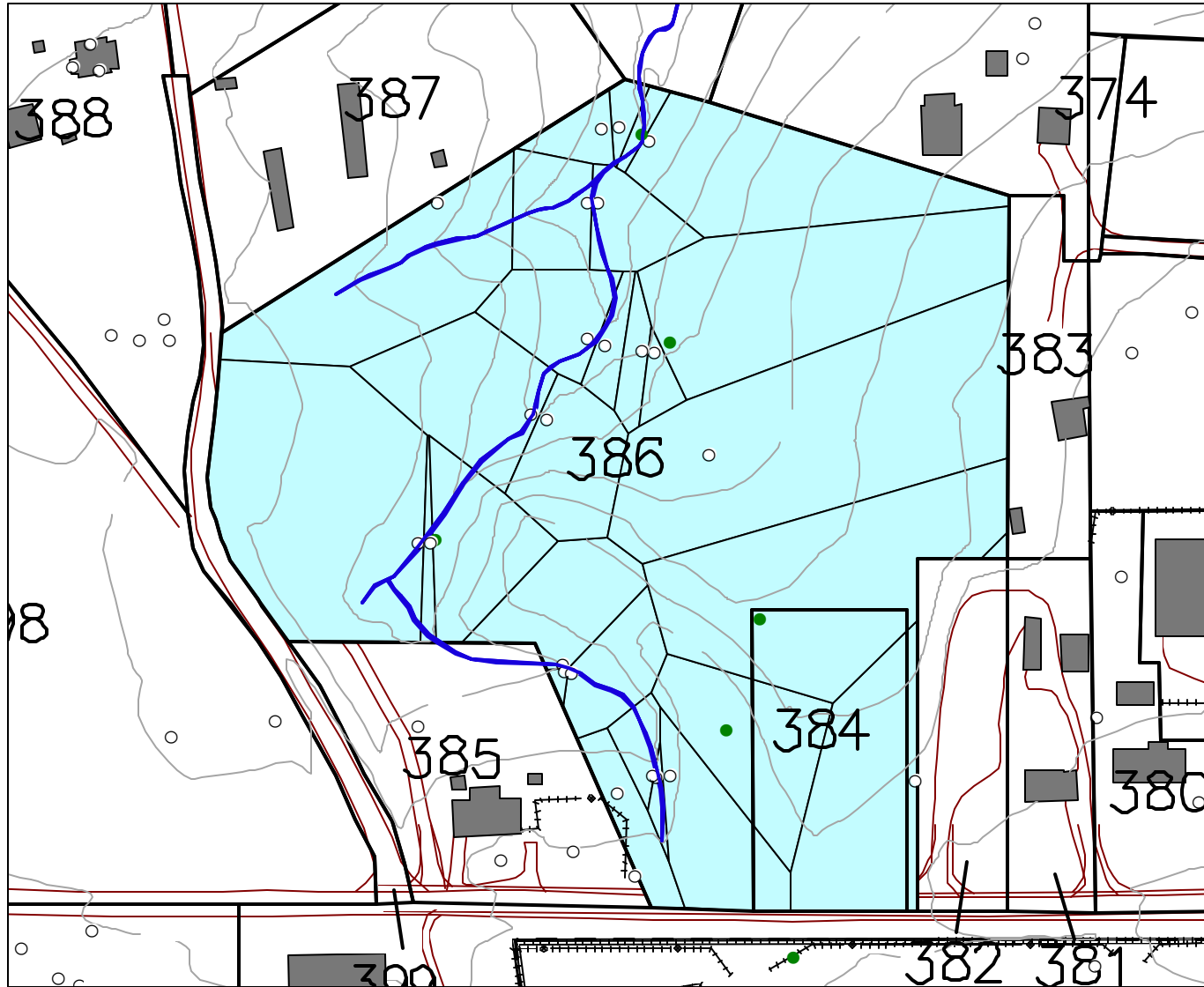
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 364 (Vacant)
Bedford, Indiana

Attachment
B.2

Arcview Plot



80 0 80 160 Feet



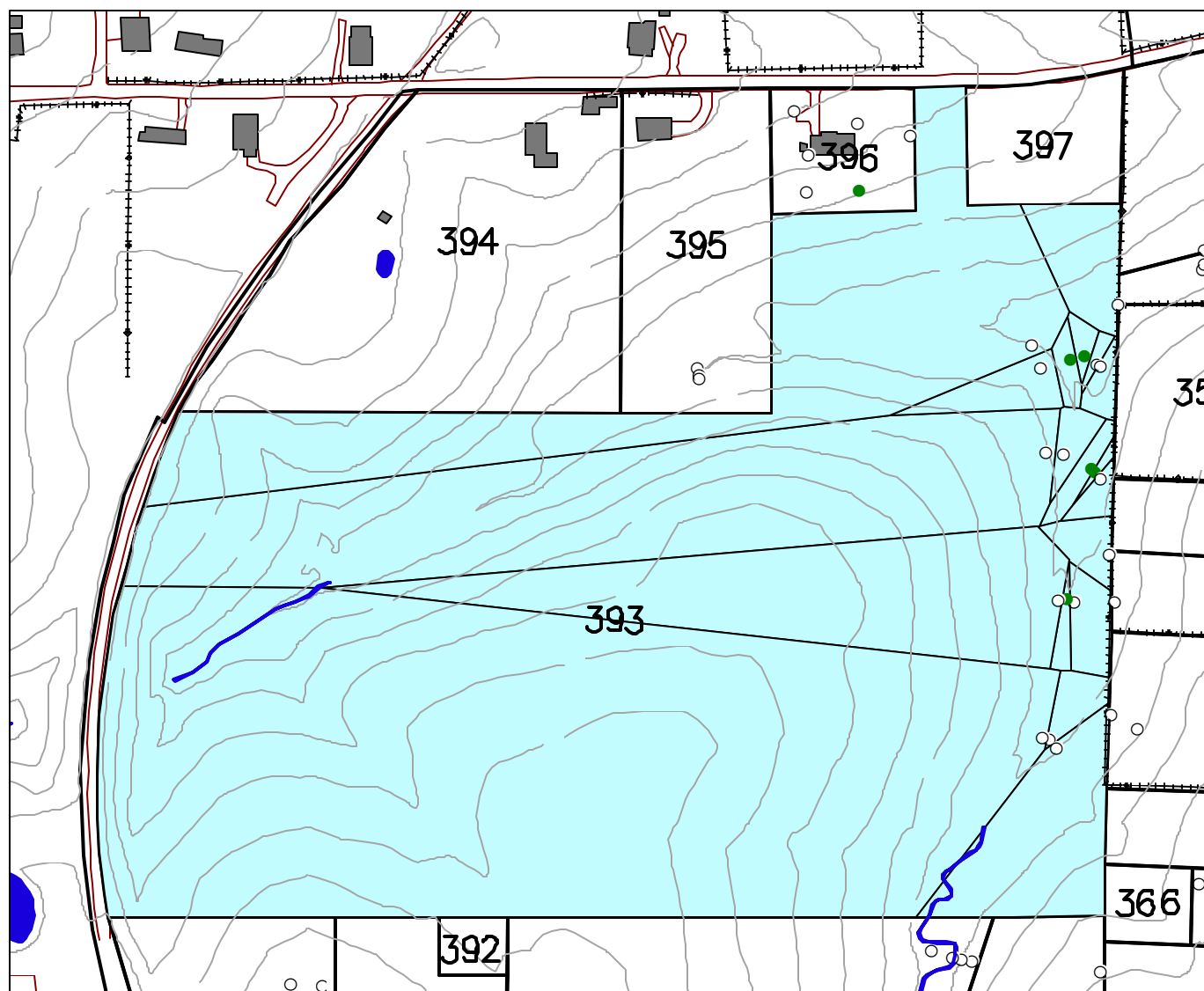
- PCBs Surface Soil Sample Locations
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcel Boundary
- Buildings

ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 384/P386 (Vacant)
Bedford, Indiana

Attachment
B.2
Arcview Plot



100 0 100 200 Feet



PCBs Surface Soil Sample Locations

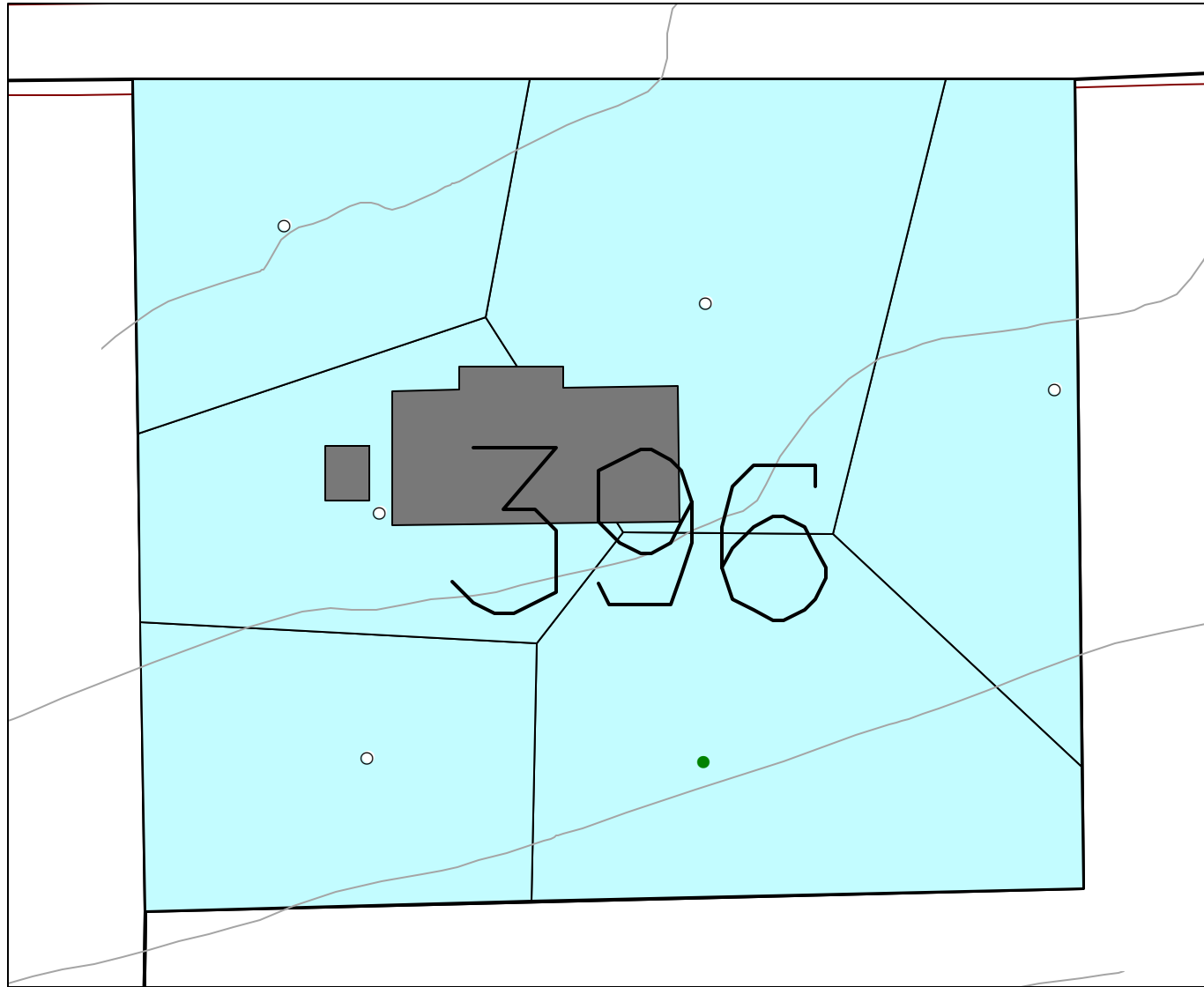
- Below Screening Criterion
- Above Screening Criterion
- Stream/Pond
- Ground Surface Contours
- ++++ Fence
- Roads
- Thiessen Polygons
- Parcels
- Buildings

ENVIRON

Date: 01/24/2005

Thiessen Polygons for Parcel 393 (Vacant) Bedford, Indiana

Attachment
B.2
Arcview Plot



20 0 20 40 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

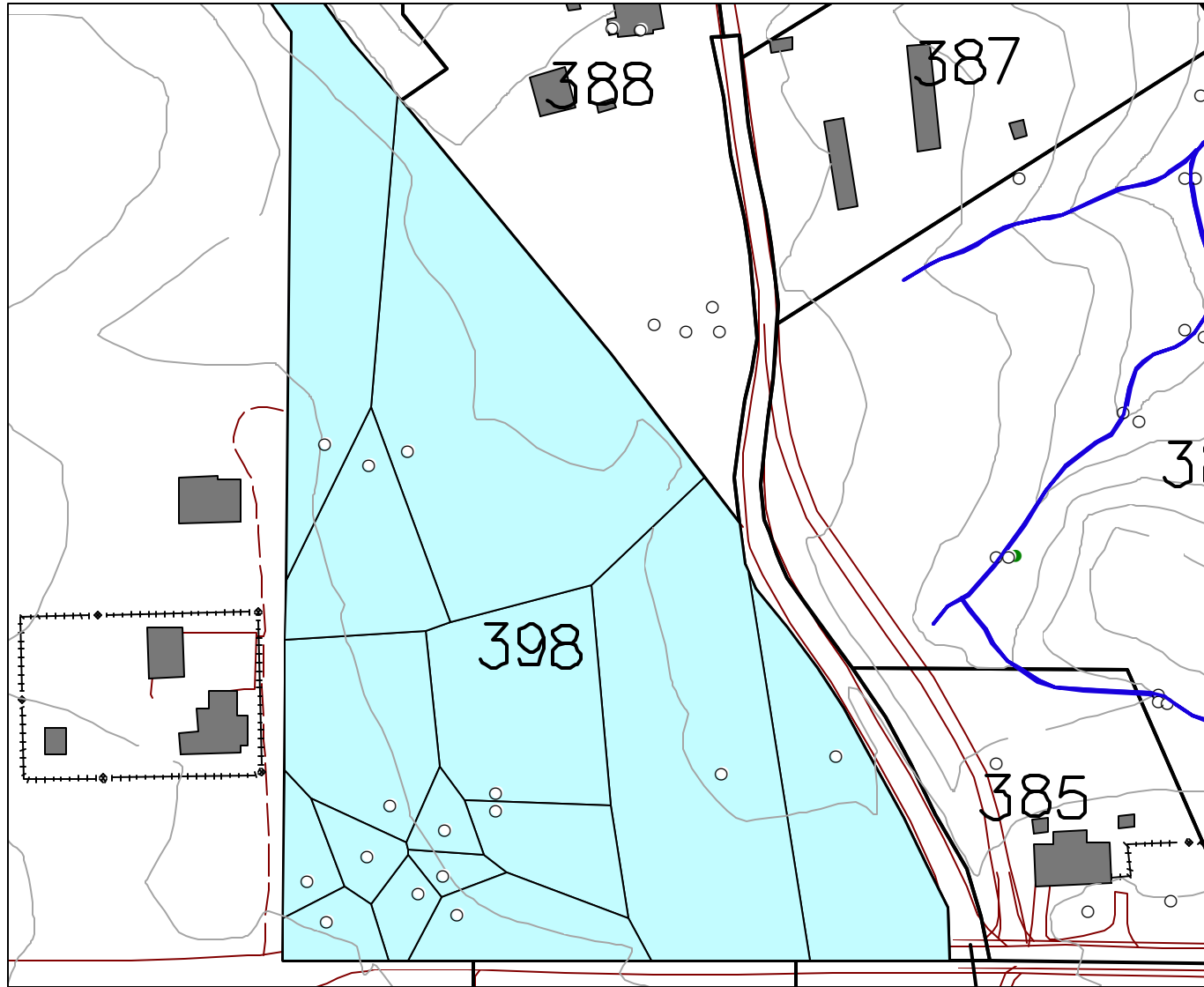
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 396 (Occupied)
Bedford, Indiana

Attachment
B.2

Arcview Plot



70 0 70 140 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

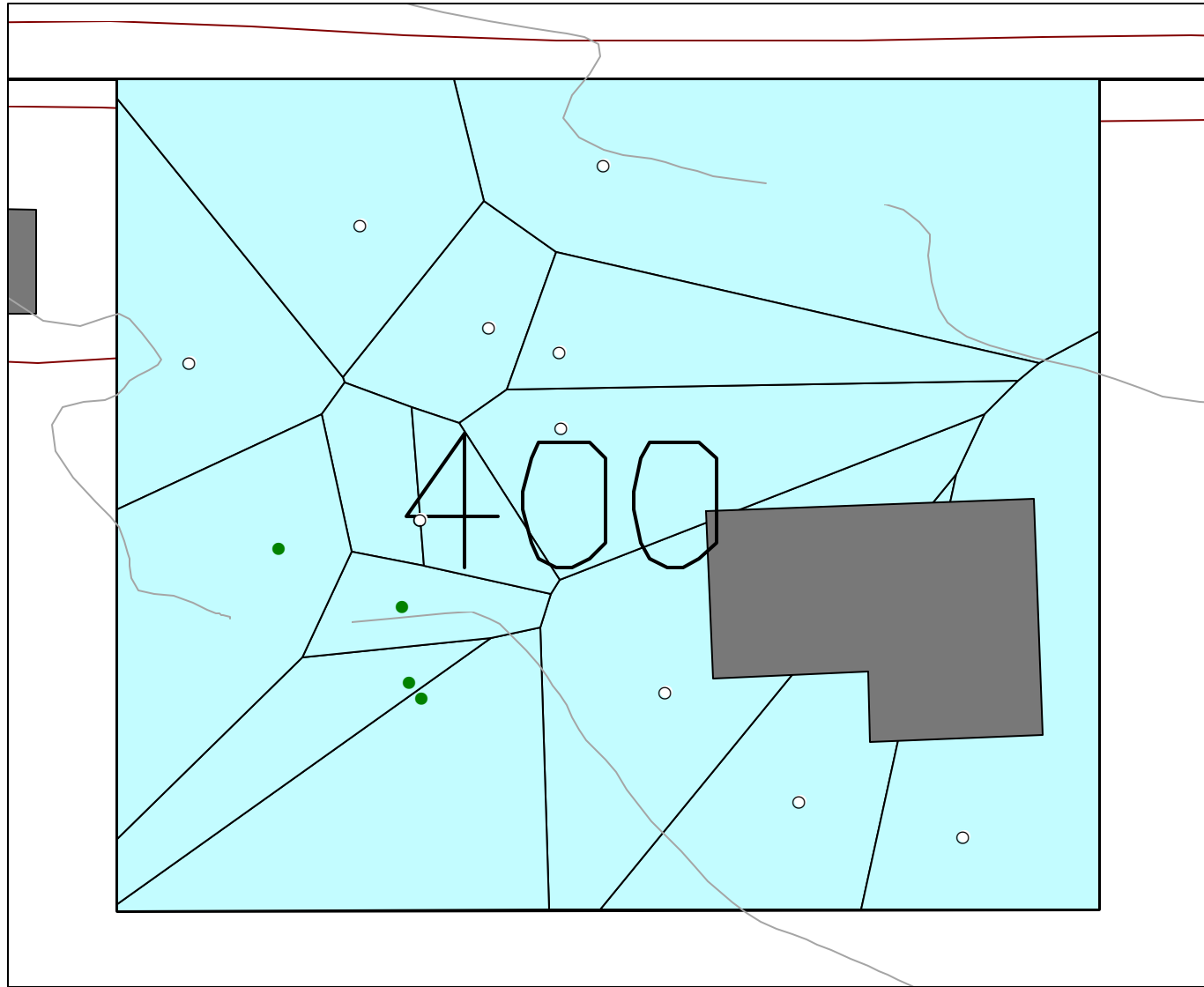
ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 398 (Occupied) Bedford, Indiana

Attachment
B.2

Arcview Plot



20 0 20 40 Feet



N



PCBs Surface Soil Sample Locations

○ Below Screening Criterion

● Above Screening Criterion

— Stream/Pond

— Ground Surface Contours

++++ Fence

— Roads

Thiessen Polygons

Parcel Boundary

Buildings

ENVIRON

Date: 1/24/2005

Thiessen Polygons for Parcel 400 (Vacant) Bedford, Indiana

Attachment
B.2

Arcview Plot

A T T A C H M E N T B . 3

Physical and Chemical Information

**Attachment B.3: Physical and Chemical Data
Bedford, Indiana**

Chem Group	Chemical	CASRN	MW (g/mole)			K _{ow} (unitless)			K _{oc} (L/kg)			K _d (L/kg)			H (unitless)			s (mg/L)			VP (mm Hg)			D _{air} (cm ² /s)			D _{water} (cm ² /s)			K _p (cm/hr)			ABS _d (unitless)			FA (unitless)		
			Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes			
VOC	Acetone	67-64-1	5.81E+01	50		5.75E-01	44		5.75E-01	44				1.59E-03	44		1.00E+06	44		2.30E+02	50	92	1.24E-01	44		1.14E-05	44		5.20E-04	44	115		62		1.00E+00	62	114	
VOC	Benzene	71-43-2	7.81E+01	50		1.35E+02	44		5.89E+01	44				2.28E-01	44		1.75E+03	44		9.50E+01	50	92	8.80E-02	44		9.80E-06	44		1.47E-02	44	115		62		1.00E+00	62		
VOC	Bromodichloromethane	75-27-4	1.64E+02	50		1.26E+02	44		5.50E+01	44				6.56E-02	44		6.74E+03	44		5.00E+01	50	92	2.98E-02	44		1.06E-05	44		4.66E-03	44	115		62		1.00E+00	62		
VOC	Bromomethane	74-83-9	9.49E+01	50		1.55E+01	44		1.05E+01	44				2.56E-01	44		1.52E+04	44		1.62E+03	50	92	7.28E-02	44		1.21E-05	44		2.84E-03	44	115		62		1.00E+00	62		
VOC	2-Butanone	78-93-3	7.21E+01	50		1.95E+00	62		5.20E+00	39				2.28E-03	50	92	2.40E+05	40		9.53E+01	50	92	9.49E-02	36	27	9.80E-06	40		9.72E-04	62	115		62		1.00E+00	62		
VOC	Carbon Disulfide	75-15-0	7.61E+01	50		1.00E+02	44		4.57E+01	44				1.24E+00	44		1.19E+03	44		3.59E+02	50	92	1.04E-01	44		1.00E-05	44		1.24E-02	44	115		62		1.00E+00	62		
VOC	Chlorobenzene	108-90-7	1.13E+02	50		7.24E+02	44		2.19E+02	44				1.52E-01	44		4.72E+02	44		1.20E+01	50	92	7.30E-02	44		8.70E-06	44		2.87E-02	44	115		62		1.00E+00	62		
VOC	Chloroethane	75-00-3	6.45E+01	50		2.69E+01	1		1.49E+01	3				3.60E-01	50	92	5.68E+03	50	92	1.01E+03	50	92	1.10E-01	36	27	1.53E-05	52		6.06E-03	1	115		62		1.00E+00	62		
VOC	Chloroform	67-66-3	1.19E+02	50		8.32E+01	44		3.98E+01	44				1.50E-01	44		7.92E+03	44		1.97E+02	50	92	1.04E-01	44		1.00E-05	44		6.29E-03	44	115		62		1.00E+00	62		
VOC	Chloromethane	74-87-3	5.05E+01	50		8.13E+00	1		7.80E+00	40				3.60E-01	50	92	5.33E+03	50	92	4.30E+03	50	92	1.26E-01	34		6.50E-06	40		3.30E-03	1	115		62		1.00E+00	62		
VOC	Cumene	98-82-8	1.20E+02	50		4.57E+03	1		3.30E+03	40				4.74E-01	50	92	6.13E+01	50	92	4.50E+00	50	92	6.50E-02	52		7.83E-06	52		8.76E-02	1	115		62		1.00E+00	62	114	
VOC	Cyclohexane	110-82-7	8.42E+01	50		2.75E+03	39		6.35E+02	39	111			7.97E+00	50	92	5.50E+01	50	92	9.69E+01	50	92	1.10E-01	52		9.14E-06	52		9.98E-02	39	115		62		1.00E+00	62	114	
VOC	Dibromochloromethane	124-48-1	2.08E+02	50		1.48E+02	44		6.31E+01	44				3.21E-02	44		2.60E+03	44		4.90E+00	50	92	1.96E-02	44		1.05E-05	44		2.92E-03	44	115		62		1.00E+00	62		
VOC	1,2-Dichlorobenzene	95-50-1	1.47E+02	50		2.69E+03	44		6.17E+02	44				7.79E-02	44		1.56E+02	44		1.36E+00	50	92	6.90E-02	44		7.90E-06	44		4.37E-02	44	115		62		1.00E+00	62		
VOC	1,3-Dichlorobenzene	541-73-1	1.47E+02	50		2.40E+03	1		1.70E+03	2				1.27E-01	50	92	1.33E+02	50	93	2.15E+00	50	92	4.14E-02	52		8.85E-06	52		4.05E-02	1	115		62		1.00E+00	62		
VOC	1,4-Dichlorobenzene	106-46-7	1.47E+02	50		2.63E+03	44		6.17E+02	44				9.96E-02	44		7.38E+01	44		1.00E+00	50	92	6.90E-02	44		7.90E-06	44		4.31E-02	44	115		62		1.00E+00	62		
VOC	Dichlorodifluoromethane	75-71-8	1.21E+02	50		1.45E+02	1		1.30E+02	40				1.40E+01	50	92	2.80E+02	50	92	4.85E+03	50	92	8.00E-02	40		8.00E-06	40		8.88E-03	1	115		62		1.00E+00	62		
VOC	1,1-Dichloroethane	75-34-3	9.90E+01	50		6.17E+01	44		3.16E+01	44				2.30E-01	44		5.06E+03	44		2.27E+02	50	92	7.42E-02	44		1.05E-05	44		6.72E-03	44	115		62		1.00E+00	62		
VOC	1,2-Dichloroethane	107-06-2	9.90E+01	50		2.95E+01	44		1.74E+01	44				4.01E-02	44		8.52E+03	44		7.89E+01	50	92	1.04E-01	44		9.90E-06	44		4.13E-03	44	115		62		1.00E+00	62		
VOC	cis-1,2-Dichloroethane	156-59-2	9.69E+01	50		7.24E+01	44		3.55E+01	44				1.67E-01	44		3.50E+03	44		2.03E+02	50	92	7.36E-02	44		1.13E-05	44		7.67E-03	44	115		62		1.00E+00	62	114	
VOC	trans-1,2-Dichloroethane	156-60-5	9.69E+01	50		1.17E+02	44		5.25E+01	44				3.85E-01	44		6.30E+03	44		3.33E+02	50	92	7.07E-02	44		1.19E-05	44		1.06E-02	44	115		62		1.00E+00	62	114	
VOC	Ethyl Benzene	100-41-4	1.06E+02	50		1.38E+03	44		3.63E+02	44				3.23E-01	44		1.69E+02	44		9.60E+00	50	92	7.50E-02	44		7.80E-06	44		4.76E-02	44	115		62		1.00E+00	62		
VOC	2-Hexanone	591-78-6	1.00E+02	50		2.40E+01	39		1.48E+01	39	111			7.15E-02	1		1.75E-04	39		1.16E+01	50	92	1.35E-01	52		1.03E-05	52		3.55E-03	39	115		62		1.00E+00	62	114	
VOC	Methyl Acetate	79-20-9	7.41E+01	55		1.51E+00	39		1.66E+00	39	111			1.15E-04	39		2.44E+05	39		2.16E+02	39		1.23E-01	52		1.10E-05	52		8.02E-04	39	115		62		1.00E+00	62	114	
VOC	Methyl tert-butyl ether	1634-04-4	8.82E+01	1		1.74E+01	39		1.15E+01	39	111			2.40E-02	69		5.10E+04	69		2.50E+02	69		8.59E-02	69		1.01E-05	69		3.35E-03	39	115		62		1.00E+00	62	114	
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+02	50		1.55E+01	62		1.90E+01	39				5.64E-03	50	92	1.90E+04	39		1.99E+01	50	92	7.50E-02	40		7.80E-06	40		2.66E-03	62	115		62		1.00E+00	62		
VOC	Methylcyclohexane	108-87-2	9.82E+01	55		4.07E+03	68		8.65E+02	68	111			1.76E+01	68		1.40E+01	68		4.60E+01	68		9.86E-02	52		8.52E-06	52		1.08E-01	68	115		62		1.00E+00	62	114	
VOC	Methylene Chloride	75-09-2	8.49E+01	50		1.78E+01	44		1.17E+01	44				8.98E-02	44		1.30E+04	44		4.33E+02	50	92	1.01E-01	44		1.17E-05	44		3.54E-03	44	115		62		1.00E+00	62		
VOC	Tetrachloroethene	127-18-4	1.66E+02	50		4.68E+02	44		1.55E+02	44				7.54E-01	44		2.00E+02	44		1.86E+01	50	92	7.20E-02	44		8.20E-06	44		1.08E-02	44	115		62		1.00E+00	62		
VOC	Toluene	108-88-3	9.21E+01	50		5.62E+02	44		1.82E+02	44				2.72E-01	44		5.26E+02	44		2.84E+01	50	92	8.70E-02	44		8.60E-06	44		3.16E-02	44	115		62		1.00E+00	62		
VOC	1,2,4-Trichlorobenzene	120-82-1	1.81E+02	50		1.02E+04	44		1.78E+03	44				5.82E-02	44		3.00E+02	44		4.31E-01	50	92	3.00E-02	44		8.23E-06	44		6.77E-02	44	115		62		1.00E+00	62		
VOC	1,1,1-Trichloroich																																					

**Attachment B.3: Physical and Chemical Data
Bedford, Indiana**

Chem Group	Chemical	CASRN	MW (g/mole)			K _{ow} (unitless)			K _{oc} (L/kg)			K _d (L/kg)			H (unitless)			s (mg/L)			VP (mm Hg)			D _{air} (cm ² /s)			D _{water} (cm ² /s)			K _p (cm/hr)			ABS _d (unitless)			FA (unitless)			
			Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes				
INORG	Cobalt	7440-48-4	5.89E+01	50			1	48				4.50E+01	35					1	61								4.00E-04	62			62			62	114				
INORG	Copper	7440-50-8	6.35E+01	50			1	48				3.50E+01	35						1	61					40	48					62			62	114				
INORG	Cyanide (amenable)	57-12-5A	2.60E+01	1			1	48				9.90E+00	44	43														1.00E-03	62			62			62	114			
INORG	Cyanide (total)	57-12-5	2.60E+01	1			1	48				9.90E+00	44	43														1.00E-03	62			62			62	114			
INORG	Iron	7439-89-6	5.58E+01	50								2.50E+01	35															1.00E-03	62			62			62	114			
INORG	Lead	7439-92-1	2.07E+02	50			1	48				9.00E+02	35					1	61					40	48		40	48	1.00E-03	62			62			62	114		
INORG	Manganese	7439-96-5	5.49E+01	50								6.50E+01	35															1.00E-03	62			62			62	114			
INORG	Mercury	7439-97-6	2.01E+02	67			1	48				1.00E+03	67		2.90E-01	67		5.60E-02	1		1.96E-03	50	92	3.07E-02	44		6.30E-06	44			1.00E-03	62			62	114			
INORG	Nickel	7440-02-0	5.87E+01	50			1	48				6.50E+01	44	43					1	61					40	48		40	48	2.00E-04	62			62			62	114	
INORG	Selenium	7782-49-2	7.90E+01	50			1	48				5.00E+00	44	43					40	48			40	48		40	48		40	48	1.00E-03	62			62			62	114
INORG	Silver	7440-22-4	1.08E+02	50			1	48				8.30E+00	44	43					1	61					40	48		40	48	6.00E-04	62			62			62	114	
INORG	Thallium	7440-28-0	2.04E+02	50			1	48				7.10E+01	44	43					1	61					40	48		40	48	1.00E-03	62			62			62	114	
INORG	Vanadium	7440-62-2	5.09E+01	50			1	48				1.00E+03	44	43					1	61				40	48		40	48	1.00E-03	62			62			62	114		
INORG	Zinc	7440-66-6	6.54E+01	50			1	48				6.20E+01	44	43					1	61					40	48		40	48	6.00E-04	62			62			62	114	

**References and Notes for Physical and Chemical Data
Bedford, Indiana**

References:

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- 64 Agency for Toxic Substances and Disease Registry (ATSDR). November 2000. Toxicological Profile for Polychlorinated Biphenyls (PCBs).
- 67 USEPA. 1997. Mercury Study Report to Congress. EPA's Office of Air Quality Planning and Standards and Office of Research and Development. December
- 68 PHYSPROP data base. Syracuse Research Corporation.
- 69 USEPA. 2004. WATER9. Version 2.0.0. Office of Air Quality Planning and Standards. July.

Notes:

- 27 Diffusivity value at 30 degrees Celcius.
- 43 pH associated with value is 6.8.
- 45 ENVIRON used the value for Chromium VI [CASRN 18540-29-9] presented in indicated reference as a surrogate.
- 48 Not Available or Not Applicable
- 60 Hydrolyzes
- 61 Insoluble
- 82 ENVIRON used Equation (70) from Reference 44 to calculate Koc value using Log Kow value from indicated reference.
- 90 Indicated source cites CHEMCALC.
- 92 Indicated source cites CHEMFATE.
- 93 Indicated source cites FATE.
- 94 Indicated source cites LIVECHEM.
- 99 ENVIRON used the value for 3-Methylphenol [CASRN 108-39-4] value as a surrogate.
- 111 ENVIRON used Equation (71) from Reference 44 to calculate Koc value using Log Kow value from indicated reference.
- 113 Personal communication with RCRA, Superfund & EPCRA Hotline on 9/15/2000; indicated reference presents the value which is off by an order of magnitude (1.23E-06 cm²/s). The database has the correct value of 1.23E-05 cm²/s.
- 114 ENVIRON calculated FA from Exhibit A-4 from the cited reference.
- 115 ENVIRON calculated Kp value using equation 3.8 (p.3-8) in reference 62 with log Kow from the indicated reference and the MW presented in table.
- 116 ENVIRON used the value for Aroclor-1254 [CASRN 11097-69-1] from the indicated reference as a surrogate.

A T T A C H M E N T B . 4

Exposure Factors for High-End Exposure Estimates

**Attachment B.4: Exposure Factors for High-End Exposure Estimates
Bedford, Indiana**

			Routine Worker		Construction Worker		Resident Age 1-6		Resident Age 7-31		Trespasser (Stream)		Trespasser (Non-Stream)	
Soil Ingestion														
Ingestion Rate	mg-soil/day	IR	50	b	200	e	200	b	100	b	100	e	100	e
Conversion Factor	kg/mg	CF	1E-06		1E-06		1E-06		1E-06		1E-06		1E-06	
Fraction Contacted	unitless	FC	1.0	e	1.0	e	1.0	e	1.0	e	0.0625	e	0.0625	e
Exposure Frequency	days/year	EF	250	b	5	e	350	b	350	b	24	e	72	e
Exposure Duration	years	ED	25	b	10	e	6	b	24	b	10	e	10	e
Body Weight	kg	BW	70	a	70	a	15	a	70	a	51	c	51	c
Averaging Time, cancer	days	AT _c	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a
Averaging Time, noncancer	days	AT _{nc}	9,125	a	3,650	a	10,950	a	10,950	a	3,650	a	3,650	a
Soil Dermal Contact														
Adherence Factor	mg-soil/cm ²	AF	0.2	d	0.2	d	0.2	d	0.07	d	0.07	d	0.07	d
Skin Surface Area	cm ² /day	SA	3,300	d	3,300	d	2,800	d	5,700	d	3,950	c	3,950	c
Conversion Factor	kg/mg	CF	1E-06		1E-06		1E-06		1E-06		1E-06		1E-06	
Fraction Contacted	unitless	FC	1.0	e	1.0	e	1.0	e	1.0	e	0.0625	e	0.0625	e
Exposure Frequency	days/year	EF	250	b	5	e	350	b	350	b	24	e	72	e
Exposure Duration	years	ED	25	b	10	e	6	b	24	b	10	e	10	e
Body Weight	kg	BW	70	a	70	a	15	b	70	b	51	c	51	c
Averaging Time, cancer	days	AT _c	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a
Averaging Time, noncancer	days	AT _{nc}	9,125	a	3,650	a	10,950	a	10,950	a	3,650	a	3,650	a
Sediment Ingestion														
Ingestion Rate	mg-soil/day	IR									50	e		
Conversion Factor	kg/mg	CF									1E-06			
Fraction Contacted	unitless	FC									0.0625	e		
Exposure Frequency	days/year	EF									24	e		
Exposure Duration	years	ED									10	e		
Body Weight	kg	BW									51	c		
Averaging Time, cancer	days	AT _c									25,550	a		
Averaging Time, noncancer	days	AT _{nc}									3,650	a		
Sediment Dermal Contact														
Adherence Factor	mg-soil/cm ²	AF									0.07	d		
Skin Surface Area	cm ² /day	SA									3,950	c		
Conversion Factor	kg/mg	CF									1E-06			
Fraction Contacted	unitless	FC									0.0625	e		
Exposure Frequency	days/year	EF									24	e		
Exposure Duration	years	ED									10	e		
Body Weight	kg	BW									51	c		
Averaging Time, cancer	days	AT _c									25,550	a		
Averaging Time, noncancer	days	AT _{nc}									3,650	a		
Incidental Groundwater Ingestion														
Drinking Rate	L-water/hr	DR			0.005	e								
Events per Day	1/d	EV			1	e								
Exposure Time	hours	ET			2	e								
Exposure Frequency	days/year	EF			5	e								
Expoure Duration	years	ED			10	e								
Body Weight	kg	BW			70	a								
Averaging Time, cancer	days	AT _c			25,550	a								
Averaging Time, noncancer	days	AT _{nc}			3,650	a								
Dermal Contact with Groundwater														
Event Time	hr	t			2	e								
Skin Surface Area	cm ²	SA			3,300	d								
Events per Day	1/d	EV			1	e								
Exposure Frequency	d/yr	EF			5	e								
Exposure Duration	yr	ED			10	e								
Body Weight	kg	BW			70	a								
Averaging Time, cancer	days	AT _c			25,550	a								
Averaging Time, noncancer	days	AT _{nc}			3,650	a								

**Attachment B.4: Exposure Factors for High-End Exposure Estimates
Bedford, Indiana**

			Routine Worker		Construction Worker		Resident Age 1-6		Resident Age 7-31		Trespasser (Stream)		Trespasser (Non-Stream)	
Incidental Surface Water Ingestion														
Drinking Rate	L-water/hr	IR									0.005	e		
Exposure Time	hours	ET									1	e		
Exposure Frequency	days/year	EF									24	e		
Expoure Duration	years	ED									10	e		
Body Weight	kg	BW									51	c		
Averaging Time, cancer	days	AT _c									25,550	a		
Averaging Time, noncancer	days	AT _{nc}									3,650	a		
Dermal Contact with Surface Water														
Event Time	hr	t									1	e		
Skin Surface Area	cm ²	SA									3,950	c		
Events per Day	1/d	EV									1	e		
Exposure Frequency	d/yr	EF									24	e		
Exposure Duration	yr	ED									10	e		
Body Weight	kg	BW									51	c		
Averaging Time, cancer	days	AT _c									25,550	a		
Averaging Time, noncancer	days	AT _{nc}									3,650	a		
Ambient Air Inhalation														
Fraction Contacted	unitless	FC	1.0	e	1.0	e	1.0	e	1.0	e	0.125	e	0.125	e
Exposure Frequency	days/year	EF	250	b	5	e	350	b	350	b	24	e	72	e
Exposure Duration	years	ED	25	b	10	e	6	b	24	b	10	e	10	e
Averaging Time, cancer	days	AT _c	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a	25,550	a
Averaging Time, noncancer	days	AT _{nc}	9,125	a	3,650	a	10,950	a	10,950	a	3,650	a	3,650	a
Notes:														
a. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A) (USEPA 2004)														
b. Human Health Evaluation Manual, Supplemental Guidance: "Standard default exposure factors." OSWER Directive 9285.6-03 (USEPA 1991)														
c. Adolescent trespassers (ages 9 to 18) have been considered with appropriate selections of body weight and skin surface area (hands, forearms, upper arms, lower legs, thighs and feet) based on the Exposure Factors Handbook (USEPA 1997).														
d. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual: Part E, Supplemental Guidance for Dermal Risk Assessment (USEPA 2004)														
e. Based on professional judgement and site-specific considerations as follows:														
- Construction workers: The incidental soil ingestion rate is based on recent USEPA studies on soil adherence to hands. The incidental water ingestion rate is conservatively based on 10% of the rate USEPA (1989) recommends for ingestion while swimming. The exposure time and frequency is based on anticipated excavation time for minor underground repairs by a worker. The exposure duration for a construction worker at a given site is assumed to be 10 years.														
- Trespassers (Stream): Exposure frequency and duration are based on two events/week for 3 months when the air temperature is above 70 F for 10 years (Indianapolis data, NOAA 1993). Exposure time is assumed to be 1 hour/event. The soil ingestion rate is assumed to be equal to that of an adult resident. The sediment ingestion rate is assumed to be half of the soil ingestion rate. The incidental water ingestion rate is based on 10% of the rate USEPA (1989) recommends for ingestion while swimming.														
- Trespasser (Non-Stream): Exposure frequency and duration for soil contact are based on two events/week for 9 months during non-winter time for 10 years. Exposure time in the stream/ponds at the site is assumed to be 1 hour/event. The soil ingestion rate is assumed to be equal to that of an adult resident.														
- The fractions contacted for routine workers, construction workers, and residents are conservatively assumed to be 1; the fractions contacted for trespassers represent 1 hour of trespassing activities out of 16 and 8 hours on which the soil ingestion/dermal contact and inhalation rates are based.														

A T T A C H M E N T B . 5

Toxicity Information

**Attachment B.5: Toxicity Values
Bedford, Indiana**

Chem Group	Chemical	CASRN	Cancer Classification			SF _{oral} (mg/kg/d) ⁻¹			SF _{dermal} (mg/kg/d) ⁻¹			URF (mg/m ³) ⁻¹			RfD _{oral} (mg/kg/d)				RfD _{dermal} (mg/kg/d)			RfC (mg/m ³)				
			Group	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	UF	Ref	Notes	Value	Ref	Notes	Value	UF	Ref	Notes	
VOC	Acetone	67-64-1	ID	1											9.00E-01	1000	1		9.00E-01	125	104	3.15E+00	1000	1	4,44	
VOC	Benzene	71-43-2	A	1		5.50E-02	1	68	5.50E-02	125	104	7.80E-03	1	60	4.00E-03	300	1		4.00E-03	125	104	3.00E-02	300	1		
VOC	Bromodichloromethane	75-27-4	B2	1		6.20E-02	1		6.20E-02	125	104	1.77E-02	1	4,45	2.00E-02	1000	1		2.00E-02	125	104	7.00E-02	1000	1	4,44	
VOC	Bromomethane	74-83-9	D	1											1.40E-03	1000	1		1.40E-03	125	104	0.005	100	1		
VOC	2-Butanone	78-93-3	ID	1											6.00E-01	1000	1		6.00E-01	125	104	5.00E+00	300	1		
VOC	Carbon Disulfide	75-15-0													1.00E-01	100	1		1.00E-01	125	104	7.00E-01	30	1		
VOC	Chlorobenzene	108-90-7	D	1											2.00E-02	1000	1		2.00E-02	125	104	6.00E-02	1000	103		
VOC	Chloroethane	75-00-3				2.90E-03	4		2.90E-03	125	104				4.00E-01		4		4.00E-01	125	104	1.00E+01	300	1		
VOC	Chloroform	67-66-3	B2	1								2.30E-02	1		1.00E-02	1000	1		1.00E-02	125	104	5.00E-02	100	117		
VOC	Chloromethane	74-87-3	D	1																		9.00E-02	1000	1		
VOC	Cumene	98-82-8	D	1											1.00E-01	1000	1		1.00E-01	125	104	4.00E-01	1000	1		
VOC	Cyclohexane	110-82-7	ID	1																		6.00E+00	300	1		
VOC	Dibromochloromethane	124-48-1	C	1		8.40E-02	1		8.40E-02	125	104	2.40E-02	1	4,45	2.00E-02	1000	1		2.00E-02	125	104	7.00E-02	1000	1	4,44	
VOC	1,2-Dichlorobenzene	95-50-1	D	1											9.00E-02	1000	1		9.00E-02	125	104	2.00E-01	1000	2	3	
VOC	1,3-Dichlorobenzene	541-73-1	D	1											9.00E-04		4		9.00E-04	125	104	1.40E-01	1000	2	3,10,44	
VOC	1,4-Dichlorobenzene	106-46-7	C	2		2.40E-02	2	6	2.40E-02	125	104	6.29E-03	4	45	3.00E-02		4		3.00E-02	125	104	8.00E-01	100	1		
VOC	Dichlorodifluoromethane	75-71-8													2.00E-01	100	1		2.00E-01	125	104	2.00E-01	10000	2		
VOC	1,1-Dichloroethane	75-34-3	C	1											1.00E-01	1000	2	26,6	1.00E-01	125	104	5.00E-01	1000	2	3	
VOC	1,2-Dichloroethane	107-06-2	B2	1		9.10E-02	1		9.10E-02	125	104	2.60E-02	1		3.00E-02		4		3.00E-02	125	104	5.00E-03	3000	102	92	
VOC	cis-1,2-Dichloroethene	156-59-2	D	1											1.00E-02	3000	126		1.00E-02	125	104	3.50E-02	3000	126	4,44	
VOC	trans-1,2-Dichloroethene	156-60-5													2.00E-02	1000	1		2.00E-02	125	104	7.00E-02	1000	1	4,44	
VOC	Ethyl Benzene	100-41-4	D	1											1.00E-01	1000	1		1.00E-01	125	104	1.00E+00	300	1		
VOC	2-Hexanone	591-78-6													4.00E-02	10000	40		4.00E-02	125	104	5.00E-03	10000	108		
VOC	Methyl Acetate	79-20-9													1.00E+00	1000	2		1.00E+00	125	104	3.50E+00	1000	2	4,44	
VOC	Methyl tert-butyl ether	1634-04-4				3.30E-03	4		3.30E-03	125	104	1.00E-04	4	45								3.00E+00	100	1		
VOC	4-Methyl-2-pentanone	108-10-1	ID	1													1	90				3.00E+00	300	1		
VOC	Methylcyclohexane	108-87-2																				3.00E+00	100	2		
VOC	Methylene Chloride	75-09-2	B2	1		7.50E-03	1		7.50E-03	125	104	4.70E-04	1		6.00E-02	100	1		6.00E-02	125	104	3.00E+00	100	2		
VOC	Tetrachloroethene	127-18-4	C-B2	77		5.20E-02	77		5.20E-02	125	104	3.06E-03	77		1.00E-02	1000	1		1.00E-02	125	104	4.00E-01	300	109	94	
VOC	Toluene	108-88-3	D	1											2.00E-01	1000	1		2.00E-01	125	104	4.00E-01	300	1		
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1											1.00E-02	1000	1		1.00E-02	125	104	2.00E-01	1000	2		
VOC	1,1,1-Trichloroethane	71-55-6	D	1											2.80E-01	90	72		2.80E-01	125	104	2.20E+00	90	126		
VOC	Trichloroethene	79-01-6	C-B2	49	18	1.10E-02	49		1.10E-02	125	104	1.70E-03	49		6.00E-03	3000	46	6, 97	6.00E-03	125	104					
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1													3.00E+01	10	1		3.00E+01	125	104	3.00E+01	100	2		
VOC	Vinyl Chloride	75-01-4	A	1		1.40E+00	1	78	1.40E+00	125	104	8.80E-03	1	79	3.00E-03	30	1		3.00E-03	125	104	1.00E-01	30	1		
VOC	Xylenes (total)	1330-20-7	ID	1											2.00E-01	1000	1		2.00E-01	125	104	1.00E-01	300	1		
SVOC	Acenaphthene	83-32-9													6.00E-02	3000	1		6.00E-02	125	104	2.10E-01	3000	1	4,44	
SVOC	Acenaphthylene	208-96-8	D	1											3.00E-02	3000	1	20	3.00E-02	125	104	1.05E-01	3000	1	20,4,44	
SVOC	Acetophenone	98-86-2	D	1											1.00E-01	3000	1		1.00E-01	125	104	3.50E-01	3000	1	4,44	
SVOC	Anthracene	120-12-7	D	1											3.00E-01	3000	1		3.00E-01	125	104		2	90		
SVOC	Benzaldehyde	100-52-7													1.00E-01	1000	1		1.00E-01	125	104	3.50E-01	1000	1	4,44	
SVOC	Benzo(a)anthracene	56-55-3	B2	1		7.30E-01	4		7.30E-01	125	104	2.09E-01	4	4,45												
SVOC	Benzo(a)pyrene	50-32-8	B2	1		7.30E+00	1		7.30E+00	125	104	8.86E-01	3	45												
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1		7.30E-01	4		7.30E-01	125	104	2.09E-01	4	4,45												
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1											3.00E-02	3000	1	20	3.00E-02	125	104	1.05E-01	3000	1	20,4,44	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1		7.30E-02	4		7.30E-02	125	104	2.09E-02	4	4,45												
SVOC	Biphenyl	92-52-4	D	1											5.00E-02	1000	1		5.00E-02	125	104	1.75E-01	1000	1	4,44	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1		1.40E-02	1		1.40E-02	125	104	4.00E-03	3	45	2.00E-02	1000	1		2.00E-02	125	104					
SVOC	Butylbenzylphthalate	85-68-7	C	1											2.00E-01	1000	1		2.00E-01	125	104	7.00E-01	1000	1	4,44	
SVOC	Caprolactam	105-60-2													5.00E-01	100	1		5.00E-01	125	104	1.75E+00	100	1	4,44	
SVOC	Carbazole	86-74-8	B2	2		2.00E-02	2		2.00E-02	125	104	5.71E-03	2	4,45												
SVOC	4-Chloroaniline	106-47-8													4.00E-03	3000	1		4.00E-03	125	104	1.40E-02	3000	1	4,44	
SVOC	Chrysene	218-01-9	B2	1		7.30E-03	4		7.30E-03	125	104	2.09E-03	4	4,45												

**Attachment B.5: Toxicity Values
Bedford, Indiana**

Chem Group	Chemical	CASRN	Cancer Classification			SF _{oral} (mg/kg/d) ⁻¹			SF _{dermal} (mg/kg/d) ⁻¹			URF (mg/m ³) ⁻¹			RfD _{oral} (mg/kg/d)				RfD _{dermal} (mg/kg/d)			RfC (mg/m ³)			
			Group	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	Ref	Notes	Value	UF	Ref	Notes	Value	Ref	Notes	Value	UF	Ref	Notes
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1		7.30E+00	4		7.30E+00	125	104	2.09E+00	4	4,45											
SVOC	Dibenzofuran	132-64-9	D	1											4.00E-03		4		4.00E-03	125	104	1.40E-02		4	4,44
SVOC	Diethylphthalate	84-66-2	D	1											8.00E-01	1000	1		8.00E-01	125	104	2.80E+00	1000	1	4,44
SVOC	2,4-Dimethylphenol	105-67-9													2.00E-02	3000	1		2.00E-02	125	104	7.00E-02	3000	1	4,44
SVOC	Di-n-butylphthalate	84-74-2	D	1											1.00E-01	1000	1	6	1.00E-01	125	104			1	90
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1	28	6.80E-01	1	28	6.80E-01	125	104	1.94E-01	1	28,4,45	1.00E-03	3000	2	6	1.00E-03	125	104	3.50E-03	3000	2	6,4,44
SVOC	Di-n-octylphthalate	117-84-0													4.00E-02	1000	126		4.00E-02	125	104		126	90	
SVOC	Fluoranthene	206-44-0	D	1											4.00E-02	3000	1		4.00E-02	125	104	1.40E-01	3000	1	4,44
SVOC	Fluorene	86-73-7	D	1											4.00E-02	3000	1		4.00E-02	125	104	1.40E-01	3000	1	4,44
SVOC	Hexachlorobenzene	118-74-1	B2	1		1.60E+00	1		1.60E+00	125	104	4.60E-01	1		8.00E-04	100	1		8.00E-04	125	104			1	90
SVOC	Hexachlorobutadiene	87-68-3	C	1		7.80E-02	1		7.80E-02	125	104	2.20E-02	1		3.00E-04		4		3.00E-04	125	104				
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1		7.30E-01	4		7.30E-01	125	104	2.09E-01	4	4,45											
SVOC	2-Methylnaphthalene	91-57-6	ID	1											4.00E-03	1000	1		4.00E-03	125	104	3.00E-03	3000	1	61
SVOC	Methylphenol (total)	1319-77-3													5.00E-02		1	99	5.00E-02	125	104	1.75E-01		1	99,4,44
SVOC	Naphthalene	91-20-3	C	1											2.00E-02	3000	1		2.00E-02	125	104	3.00E-03	3000	1	
SVOC	Phenanthrene	85-01-8	D	1											3.00E-02	3000	1	20	3.00E-02	125	104	1.05E-01	3000	1	20,4,44
SVOC	Phenol	108-95-2	ID	1											3.00E-01	300	1		3.00E-01	125	104			1	90,98
SVOC	Pyrene	129-00-0	D	1											3.00E-02	3000	1		3.00E-02	125	104	1.05E-01	3000	1	4,44
P/PCB	PCBs (total)	1336-36-3	B2	1		2.00E+00	1	30,32	2.00E+00	125	104	5.71E-01	1	30,32,45	2.00E-05	300	1	72	2.00E-05	125	104				
INORG	Aluminum	7429-90-5	D	90			90	90					90	90	1.00E+00	100	85		1.00E+00	125	104	5.00E-03	300	84	
INORG	Antimony	7440-36-0													4.00E-04	1000	1		6.00E-05	125	104	1.40E-03	1000	1	4,44
INORG	Arsenic	7440-38-2	A	1		1.50E+00	1		1.50E+00	125	104	4.30E+00	1		3.00E-04	3	1		3.00E-04	125	104				
INORG	Barium	7440-39-3	D	1											7.00E-02	3	1		7.00E-02	125	104			1	90
INORG	Beryllium	7440-41-7	B1	1								2.40E+00	1		2.00E-03	300	1		1.40E-05	125	104	2.00E-05	10	1	
INORG	Cadmium	7440-43-9	B1	1								1.80E+00	1		1.00E-03	10	1	95	2.50E-05	125	104	2.00E-04		3	44
INORG	Chromium (total)	7440-47-3										1.20E+01	1	8	3.00E-03	900	1	8	7.50E-05	125	104				
INORG	Cobalt	7440-48-4	B1	126								2.80E+00	126		2.00E-02	10	126		2.00E-02	125	104	2.00E-05	100	126	
INORG	Copper	7440-50-8	D	1											4.00E-02	2	50	49	4.00E-02	125	104	1.40E-01	2	50	49,4,44
INORG	Cyanide (amenable)	57-12-5A	D	1											2.00E-02	500	1		2.00E-02	125	104	7.00E-02	500	1	4,44
INORG	Cyanide (total)	57-12-5	D	1											2.00E-02	500	1		2.00E-02	125	104	7.00E-02	500	1	4,44
INORG	Iron	7439-89-6	D	91			91	90					91	90	3.00E-01	1	87		3.00E-01	125	104			92	90
INORG	Lead	7439-92-1	B2	1																					
INORG	Manganese	7439-96-5	D	1											1.40E-01	1	1		5.60E-03	125	104	5.00E-05	1000	1	
INORG	Mercury	7439-97-6	D	1											3.00E-04	1000	1	51	2.10E-05	125	104	3.00E-04	30	1	
INORG	Nickel	7440-02-0	A	1								2.40E-01	1		2.00E-02	300	1		8.00E-04	125	104				
INORG	Selenium	7782-49-2	D	1											5.00E-03	3	1		5.00E-03	125	104	1.75E-02	3	1	4,44
INORG	Silver	7440-22-4	D	1											5.00E-03	3	1		2.00E-04	125	104	1.00E-05	1000	83	
INORG	Thallium	7440-28-0													7.00E-05	3000	52	49	7.00E-05	125	104	2.45E-04	3000	52	49,4,44
INORG	Vanadium	7440-62-2													7.00E-03	100	2	6	1.82E-04	125	104	2.45E-02	100	2	6,4,44
INORG	Zinc	7440-66-6	D	1											3.00E-01	3	1		3.00E-01	125	104	1.05E+00	3	1	4,44

References and Notes for Toxicity Values Bedford, Indiana	
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126	Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) Database
Notes:	
3	HEAST Alternate Method.
4	ENVIRON obtained value by route-to-route extrapolation.
6	Under review, according to IRIS.
8	ENVIRON used Chromium VI [CASRN 18540-29-9] value from IRIS (reference 1) as a surrogate.
10	ENVIRON used 1,2-Dichlorobenzene [CASRN 95-50-1] value from the indicated reference as a surrogate.
18	Not verifiable, according to IRIS.
20	ENVIRON used Pyrene [CASRN 129-00-0] value from IRIS (reference 1) as a surrogate.
26	USEPA obtained value by route-to-route extrapolation.
28	USEPA used 2,4-,2,6-Dinitrotolunene mixture value from IRIS (reference 1) as a surrogate.
30	Upper-bound slope factor.
32	High risk & persistence tier for: food chain exposure; sediment/soil ingestion; dust/aerosol inhalation; dermal exposure, if an absorption factor is applied; presence of dioxin-like, tumor-promoting/persistent congeners; and all early life exposures.
44	ENVIRON derived inhalation RfC from inhalation RfD value presented in the indicated reference, using standard USEPA methodology presented in HEAST.
45	ENVIRON derived inhalation URF from Inhalation Slope Factor value presented in the indicated reference, using standard USEPA methodology presented in HEAST.
49	ENVIRON derived oral RfD from adverse health effect level value presented in the indicated reference.
51	ENVIRON used Mercuric Chloride [CASRN 7487-94-7] value from the indicated reference as a surrogate.
60	IRIS provides a range of 2.2E-6 to 7.8E-6 (ug/m3)-1 as the inhalation URF for Benzene.
61	ENVIRON used Naphthalene [CASRN 91-20-3] value from indicated reference as a surrogate.
72	ENVIRON used Aroclor 1254 [CASRN 11097-69-1] value from the indicated reference as a surrogate for PCBs [CASRN 1336-36-3].
78	IRIS recommends an oral Slope Factor for Vinyl Chloride of 7.2E-1 (mg/kg/d)-1 to account for continuous lifetime exposure during adulthood; a twofold increase to 1.4 (mg/kg/d)-1 is recommended to account for continuous exposure from birth.
79	IRIS recommends an inhalation URF for Vinyl Chloride of 4.4E-6 (ug/m3)-1 to account for continuous lifetime exposure during adulthood; a twofold increase to 8.8E-6 (ug/m3)-1 is recommended to account for continuous exposure from birth.
90	Inadequate data exist to derive a toxicity value, according to the indicated reference.
94	Two provisional RfC values are presented in the indicated reference (4E-1 and 6E-1 mg/m3). Personal communication with NCEA indicated that either RfC is acceptable and the RfC should be chosen on a case-by-case basis.
95	This RfD is for dietary exposure. The RfD for drinking water exposure is 0.0005 mg/kg/day.
97	ENVIRON used withdrawn source.
98	Route-to-route extrapolation is not appropriate, according to the indicated reference.
99	ENVIRON used 3-Methylphenol [CASRN 108-39-4] values from the indicated reference as a surrogate.
104	Dermal toxicity value is extrapolated from oral toxicity value in accordance with the referenced EPA guidance.

A T T A C H M E N T B . 6

Exposure of Routine Workers to On-Site Soil

Attachment B.6: Upper-Bound Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A004	VOC	Acetone	67-64-1	ID	9	1	5.60E-02			6.9E+04		8.1E-07
A004	VOC	Methyl Acetate	79-20-9		9	2	5.60E-03			2.5E+05		2.2E-08
A004	VOC	Methylene Chloride	75-09-2	B2	9	1	4.40E-03		2.6E+02	1.2E+04	1.7E-10	3.6E-07
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	9	3	1.50E-01		1.8E+03	1.8E+04	8.5E-10	8.5E-06
A004	SVOC	Di-n-butylphthalate	84-74-2	D	9	2	5.30E-01			8.8E+04		6.0E-06
A004	SVOC	Fluoranthene	206-44-0	D	9	1	5.90E-02			2.9E+04		2.0E-06
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	9	1	2.80E-01			3.6E+02		7.7E-04
A004	SVOC	Phenanthrene	85-01-8	D	9	1	8.90E-02			2.0E+04		4.5E-06
A004	SVOC	Phenol	108-95-2	ID	9	2	1.50E+00			2.6E+05		5.7E-06
A004	SVOC	Pyrene	129-00-0	D	9	1	8.70E-02			2.2E+04		4.0E-06
A004	P/PCB	PCBs (total)	1336-36-3	B2	12	9	4.13E+02		8.8E+00	1.4E+01	4.7E-04	2.9E+01
A004	INORG	Aluminum	7429-90-5	D	9	9	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004	INORG	Arsenic	7440-38-2	A	9	9	1.07E+01	1.13E+01	2.7E+01	4.4E+02		
A004	INORG	Barium	7440-39-3	D	9	9	1.12E+02	8.38E+01		1.4E+05		1.9E-04
A004	INORG	Beryllium	7440-41-7	B1	9	5	1.40E+00	5.70E-01	7.3E+04	4.0E+03	1.1E-10	2.1E-04
A004	INORG	Cadmium	7440-43-9	B1	9	1	7.00E-01	5.52E-01	9.7E+04	1.3E+03	1.5E-11	1.1E-04
A004	INORG	Chromium (total)	7440-47-3		9	9	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004	INORG	Cobalt	7440-48-4	B1	9	9	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004	INORG	Copper	7440-50-8	D	9	9	9.36E+02	1.89E+01		8.2E+04		1.1E-02
A004	INORG	Iron	7439-89-6	D	9	9	3.41E+04	2.44E+04		6.1E+05		1.6E-02
A004	INORG	Manganese	7439-96-5	D	9	9	5.44E+02	6.76E+02		1.5E+05		
A004	INORG	Mercury	7439-97-6	D	9	8	6.00E-01	7.05E-02		8.7E+01		6.1E-03
A004	INORG	Nickel	7440-02-0	A	9	9	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004	INORG	Selenium	7782-49-2	D	9	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A004	INORG	Silver	7440-22-4	D	9	1	2.00E-01			8.8E+03		2.3E-05
A004	INORG	Thallium	7440-28-0		9	4	1.00E+00	8.40E-01		1.4E+02		1.1E-03
A004	INORG	Vanadium	7440-62-2		9	9	5.33E+01	4.18E+01		1.4E+04		8.0E-04
A004	INORG	Zinc	7440-66-6	D	9	9	1.44E+02	5.48E+01		6.1E+05		1.5E-04
A004a_south	P/PCB	PCBs (total)	1336-36-3	B2	55	51	2.63E+02		8.8E+00	1.4E+01	3.0E-04	1.8E+01
A004a_west	VOC	Acetone	67-64-1	ID	5	2	1.50E-02			6.9E+04		2.2E-07
A004a_west	VOC	Chlorobenzene	108-90-7	D	5	2	4.50E-04			6.7E+02		6.7E-07
A004a_west	VOC	Methyl Acetate	79-20-9		5	1	3.50E-03			2.5E+05		1.4E-08
A004a_west	VOC	Methylene Chloride	75-09-2	B2	5	1	4.00E-03		2.6E+02	1.2E+04	1.6E-10	3.3E-07
A004a_west	SVOC	Benzaldehyde	100-52-7		5	1	8.00E-02			1.7E+04		4.6E-06
A004a_west	SVOC	Benzo(a)pyrene	50-32-8	B2	5	1	2.40E-02		2.9E+00		8.3E-08	
A004a_west	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	1	3.80E-02		2.8E+01		1.3E-08	
A004a_west	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01		1.8E+03	1.8E+04	6.8E-10	6.8E-06
A004a_west	SVOC	Di-n-butylphthalate	84-74-2	D	5	1	5.30E-01			8.8E+04		6.0E-06
A004a_west	SVOC	Fluoranthene	206-44-0	D	5	2	3.30E-02			2.9E+04		1.1E-06
A004a_west	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	1	3.20E-02		2.9E+01		1.1E-08	
A004a_west	SVOC	Phenanthrene	85-01-8	D	5	1	1.80E-02			2.0E+04		9.0E-07
A004a_west	SVOC	Phenol	108-95-2	ID	5	1	2.20E-01			2.6E+05		8.3E-07
A004a_west	SVOC	Pyrene	129-00-0	D	5	2	2.50E-02			2.2E+04		1.1E-06
A004a_west	P/PCB	PCBs (total)	1336-36-3	B2	104	98	4.13E+02		8.8E+00	1.4E+01	4.7E-04	2.9E+01
A004a_west	INORG	Aluminum	7429-90-5	D	5	5	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004a_west	INORG	Antimony	7440-36-0		5	1	3.90E-01	4.40E-01		8.2E+02		
A004a_west	INORG	Arsenic	7440-38-2	A	5	5	1.01E+01	1.13E+01	2.7E+01	4.4E+02		
A004a_west	INORG	Barium	7440-39-3	D	5	5	1.18E+02	8.38E+01		1.4E+05		2.4E-04
A004a_west	INORG	Beryllium	7440-41-7	B1	5	3	8.80E-01	5.70E-01	7.3E+04	4.0E+03	4.3E-11	7.8E-05
A004a_west	INORG	Cadmium	7440-43-9	B1	5	3	1.30E-01	5.52E-01	9.7E+04	1.3E+03		
A004a_west	INORG	Chromium (total)	7440-47-3		5	5	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004a_west	INORG	Cobalt	7440-48-4	B1	5	5	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004a_west	INORG	Copper	7440-50-8	D	5	5	3.13E+02	1.89E+01		8.2E+04		3.6E-03
A004a_west	INORG	Cyanide (total)	57-12-5	D	5	1	1.80E-01			4.1E+04		4.4E-06
A004a_west	INORG	Iron	7439-89-6	D	5	5	2.09E+04	2.44E+04		6.1E+05		
A004a_west	INORG	Manganese	7439-96-5	D	5	5	1.28E+03	6.76E+02		1.5E+05		4.0E-03
A004a_west	INORG	Mercury	7439-97-6	D	5	4	1.50E-01	7.05E-02		8.7E+01		9.1E-04
A004a_west	INORG	Nickel	7440-02-0	A	5	5	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004a_west	INORG	Selenium	7782-49-2	D	5	3	7.60E-01	3.96E-01		1.0E+04		3.6E-05
A004a_west	INORG	Thallium	7440-28-0		5	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A004a_west	INORG	Vanadium	7440-62-2		5	5	3.46E+01	4.18E+01		1.4E+04		
A004a_west	INORG	Zinc	7440-66-6	D	5	5	1.48E+02	5.48E+01		6.1E+05		1.5E-04
A005	VOC	Acetone	67-64-1	ID	12	2	3.60E-02			6.9E+04		5.2E-07
A005	VOC	Benzene	71-43-2	A	12	1	1.30E-03		1.7E+01	1.4E+02	7.5E-10	9.0E-06
A005	VOC	2-Butanone	78-93-3	ID	12	2	1.30E-02			1.1E+05		1.2E-07
A005	VOC	Carbon Disulfide	75-15-0		12	1	1.50E-03			1.4E+03		1.1E-06
A005	VOC	Chlorobenzene	108-90-7	D	12	1	7.80E-04			6.7E+02		1.2E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	12	1	1.20E-03			5.2E+03		2.3E-07
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	12	1	7.10E-03			1.4E+03		5.0E-06
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	12	2	2.80E-03		1.0E+02	1.4E+04	2.8E-10	1.9E-07
A005	VOC	Ethyl Benzene	100-41-4	D	12	1	6.40E-04			9.4E+03		6.8E-08
A005	VOC	Methyl Acetate	79-20-9		12	1	1.70E-03			2.5E+05		6.8E-09
A005	VOC	Methylene Chloride	75-09-2	B2	12	2	1.85E-02		2.6E+02	1.2E+04	7.2E-10	1.5E-06
A005	VOC	Tetrachloroethene	127-18-4	C-B2	12	1	1.20E-02		4.0E+01	1.7E+03	3.0E-09	7.2E-06
A005	VOC	Toluene	108-88-3	D	12	1	1.60E-03			2.9E+03		5.6E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	12	1	1.70E-02			8.9E+03		1.9E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	12	1	2.10E-03			1.1E+03		2.0E-06

Attachment B.6: Upper-Bound Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	2	6.60E-02		2.8E+01		2.3E-08	
A005	SVOC	Chrysene	218-01-9	B2	12	1	4.98E-02		2.8E+03		1.8E-10	
A005	SVOC	Di-n-octylphthalate	117-84-0		12	1	5.65E-02			3.5E+04		1.6E-06
A005	SVOC	Fluoranthene	206-44-0	D	12	1	7.65E-02			2.9E+04		2.6E-06
A005	SVOC	Pyrene	129-00-0	D	12	1	6.50E-02			2.2E+04		3.0E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	21	19	2.50E+03		8.8E+00	1.4E+01	2.8E-03	1.7E+02
A005	INORG	Aluminum	7429-90-5	D	12	12	1.64E+04	1.48E+04		1.9E+06		8.3E-04
A005	INORG	Antimony	7440-36-0		12	2	7.90E-01	4.40E-01		8.2E+02		4.3E-04
A005	INORG	Arsenic	7440-38-2	A	12	12	9.40E+00	1.13E+01	2.7E+01	4.4E+02		
A005	INORG	Barium	7440-39-3	D	12	12	1.30E+02	8.38E+01		1.4E+05		3.2E-04
A005	INORG	Beryllium	7440-41-7	B1	12	8	1.10E+00	5.70E-01	7.3E+04	4.0E+03	7.3E-11	1.3E-04
A005	INORG	Cadmium	7440-43-9	B1	12	6	5.80E-01	5.52E-01	9.7E+04	1.3E+03	2.9E-12	2.1E-05
A005	INORG	Chromium (total)	7440-47-3		12	12	4.49E+01	2.82E+01	1.5E+04	6.1E+03	1.1E-08	2.7E-03
A005	INORG	Cobalt	7440-48-4	B1	12	12	2.65E+01	1.00E+01	6.2E+04	3.1E+04	2.6E-09	5.3E-04
A005	INORG	Copper	7440-50-8	D	12	12	9.86E+01	1.89E+01		8.2E+04		9.7E-04
A005	INORG	Cyanide (total)	57-12-5	D	12	1	2.50E-01			4.1E+04		6.1E-06
A005	INORG	Iron	7439-89-6	D	12	12	3.11E+04	2.44E+04		6.1E+05		1.1E-02
A005	INORG	Manganese	7439-96-5	D	12	12	1.64E+03	6.76E+02		1.5E+05		6.5E-03
A005	INORG	Mercury	7439-97-6	D	12	11	1.70E-01	7.05E-02		8.7E+01		1.1E-03
A005	INORG	Nickel	7440-02-0	A	12	12	2.85E+01	1.83E+01	7.3E+05	4.1E+04	1.4E-10	2.5E-04
A005	INORG	Selenium	7782-49-2	D	12	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A005	INORG	Silver	7440-22-4	D	12	1	1.70E-01			8.8E+03		1.9E-05
A005	INORG	Thallium	7440-28-0		12	3	6.60E-01	8.40E-01		1.4E+02		
A005	INORG	Vanadium	7440-62-2		12	12	7.75E+01	4.18E+01		1.4E+04		2.5E-03
A005	INORG	Zinc	7440-66-6	D	12	12	1.06E+02	5.48E+01		6.1E+05		8.4E-05
A006	VOC	Acetone	67-64-1	ID	17	1	9.70E-03			6.9E+04		1.4E-07
A006	VOC	Chlorobenzene	108-90-7	D	17	1	4.00E+00			6.7E+02		5.9E-03
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	17	2	2.60E+00			5.2E+03		5.0E-04
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	17	2	1.80E+01			1.4E+03		1.3E-02
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	17	2	5.70E+01		1.0E+02	1.4E+04	5.6E-06	3.9E-03
A006	VOC	1,2-Dichloroethane	107-06-2	B2	17	1	1.70E-02		7.6E+00	3.6E+01	2.2E-08	4.8E-04
A006	VOC	Methyl Acetate	79-20-9		17	3	2.40E-03			2.5E+05		9.6E-09
A006	VOC	Methylene Chloride	75-09-2	B2	17	3	1.20E-02		2.6E+02	1.2E+04	4.7E-10	9.9E-07
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	17	2	7.00E-01			8.9E+03		7.8E-05
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	17	2	2.00E+00		1.8E+03	1.8E+04	1.1E-08	1.1E-04
A006	SVOC	2,4-Dimethylphenol	105-67-9		17	1	1.00E-01			1.1E+04		8.9E-06
A006	SVOC	Di-n-octylphthalate	117-84-0		17	4	6.20E+01			3.5E+04		1.8E-03
A006	P/PCB	PCBs (total)	1336-36-3	B2	19	16	8.06E+03		8.8E+00	1.4E+01	9.1E-03	5.6E+02
A006	INORG	Aluminum	7429-90-5	D	17	17	1.68E+04	1.48E+04		1.9E+06		1.0E-03
A006	INORG	Antimony	7440-36-0		14	1	9.40E-01	4.40E-01		8.2E+02		6.1E-04
A006	INORG	Arsenic	7440-38-2	A	17	17	1.12E+01	1.13E+01	2.7E+01	4.4E+02		
A006	INORG	Barium	7440-39-3	D	17	17	1.43E+02	8.38E+01		1.4E+05		4.1E-04
A006	INORG	Beryllium	7440-41-7	B1	17	8	9.10E-01	5.70E-01	7.3E+04	4.0E+03	4.7E-11	8.6E-05
A006	INORG	Cadmium	7440-43-9	B1	17	11	3.30E+00	5.52E-01	9.7E+04	1.3E+03	2.8E-10	2.1E-03
A006	INORG	Chromium (total)	7440-47-3		17	17	4.91E+01	2.82E+01	1.5E+04	6.1E+03	1.4E-08	3.4E-03
A006	INORG	Cobalt	7440-48-4	B1	17	17	1.88E+01	1.00E+01	6.2E+04	3.1E+04	1.4E-09	2.8E-04
A006	INORG	Copper	7440-50-8	D	17	17	2.26E+02	1.89E+01		8.2E+04		2.5E-03
A006	INORG	Iron	7439-89-6	D	17	17	3.66E+04	2.44E+04		6.1E+05		2.0E-02
A006	INORG	Manganese	7439-96-5	D	17	17	1.00E+03	6.76E+02		1.5E+05		2.2E-03
A006	INORG	Mercury	7439-97-6	D	17	15	2.20E-01	7.05E-02		8.7E+01		1.7E-03
A006	INORG	Nickel	7440-02-0	A	17	17	1.87E+02	1.83E+01	7.3E+05	4.1E+04	2.3E-09	4.1E-03
A006	INORG	Selenium	7782-49-2	D	17	6	1.60E+00	3.96E-01		1.0E+04		1.2E-04
A006	INORG	Silver	7440-22-4	D	17	1	5.50E-01			8.8E+03		6.3E-05
A006	INORG	Thallium	7440-28-0		17	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A006	INORG	Vanadium	7440-62-2		17	17	6.01E+01	4.18E+01		1.4E+04		1.3E-03
A006	INORG	Zinc	7440-66-6	D	17	17	1.09E+03	5.48E+01		6.1E+05		1.7E-03
A015	VOC	2-Butanone	78-93-3	ID	3	1	3.80E-03			1.1E+05		3.4E-08
A015	VOC	Ethyl Benzene	100-41-4	D	3	1	6.40E-04			9.4E+03		6.8E-08
A015	VOC	Methyl Acetate	79-20-9		3	1	1.40E-03			2.5E+05		5.6E-09
A015	VOC	Methylene Chloride	75-09-2	B2	3	2	8.80E-03		2.6E+02	1.2E+04	3.4E-10	7.3E-07
A015	VOC	Xylenes (total)	1330-20-7	ID	3	1	5.00E-03			1.1E+03		4.7E-06
A015	SVOC	Acenaphthene	83-32-9		3	1	5.05E-02			2.9E+04		1.7E-06
A015	SVOC	Anthracene	120-12-7	D	3	2	6.38E-02			2.3E+05		2.8E-07
A015	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	2.06E-01		2.8E+01		7.2E-08	
A015	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	2.37E-01		2.9E+00		8.2E-07	
A015	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	3.45E-01		2.8E+01		1.2E-07	
A015	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.55E-01			2.3E+04		6.9E-06
A015	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	1.20E-01		2.9E+02		4.2E-09	
A015	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	4.98E-02		1.8E+03	1.8E+04	2.8E-10	2.8E-06
A015	SVOC	Carbazole	86-74-8	B2	3	2	5.08E-02		1.2E+03		4.4E-10	
A015	SVOC	Chrysene	218-01-9	B2	3	2	2.59E-01		2.8E+03		9.3E-10	
A015	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	2	4.95E-02		2.9E+00		1.7E-07	
A015	SVOC	Di-n-butylphthalate	84-74-2	D	3	1	3.75E-01			8.8E+04		4.3E-06
A015	SVOC	Fluoranthene	206-44-0	D	3	2	5.25E-01			2.9E+04		1.8E-05
A015	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	1.54E-01		2.9E+01		5.3E-08	
A015	SVOC	Naphthalene	91-20-3	C	3	1	4.18E-02			3.0E+02		1.4E-04
A015	SVOC	Phenanthrene	85-01-8	D	3	2	2.87E-01			2.0E+04		1.4E-05

Attachment B.6: Upper-Bound Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A015	SVOC	Phenol	108-95-2	ID	3	3	1.85E-01			2.6E+05		7.0E-07
A015	SVOC	Pyrene	129-00-0	D	3	2	4.30E-01			2.2E+04		2.0E-05
A015	P/PCB	PCBs (total)	1336-36-3	B2	3	3	3.76E+01		8.8E+00	1.4E+01	4.3E-05	2.6E+00
A015	INORG	Aluminum	7429-90-5	D	3	3	6.93E+03	1.48E+04		1.9E+06		
A015	INORG	Arsenic	7440-38-2	A	3	3	1.70E+00	1.13E+01	2.7E+01	4.4E+02		
A015	INORG	Barium	7440-39-3	D	3	3	5.52E+02	8.38E+01		1.4E+05		3.3E-03
A015	INORG	Cadmium	7440-43-9	B1	3	2	6.95E-01	5.52E-01	9.7E+04	1.3E+03	1.5E-11	1.1E-04
A015	INORG	Chromium (total)	7440-47-3		3	3	3.02E+01	2.82E+01	1.5E+04	6.1E+03	1.4E-09	3.3E-04
A015	INORG	Cobalt	7440-48-4	B1	3	3	3.14E+01	1.00E+01	6.2E+04	3.1E+04	3.4E-09	6.9E-04
A015	INORG	Copper	7440-50-8	D	3	3	1.78E+02	1.89E+01		8.2E+04		1.9E-03
A015	INORG	Iron	7439-89-6	D	3	3	6.75E+03	2.44E+04		6.1E+05		
A015	INORG	Manganese	7439-96-5	D	3	3	1.39E+02	6.76E+02		1.5E+05		
A015	INORG	Mercury	7439-97-6	D	3	3	1.60E+00	7.05E-02		8.7E+01		1.8E-02
A015	INORG	Nickel	7440-02-0	A	3	3	4.53E+01	1.83E+01	7.3E+05	4.1E+04	3.7E-10	6.6E-04
A015	INORG	Silver	7440-22-4	D	3	2	3.00E-01			8.8E+03		3.4E-05
A015	INORG	Thallium	7440-28-0		3	1	7.48E-01	8.40E-01		1.4E+02		
A015	INORG	Vanadium	7440-62-2		3	3	6.60E+00	4.18E+01		1.4E+04		
A015	INORG	Zinc	7440-66-6	D	3	3	9.62E+01	5.48E+01		6.1E+05		6.8E-05
A021	VOC	Acetone	67-64-1	ID	24	2	4.90E-02			6.9E+04		7.1E-07
A021	VOC	2-Butanone	78-93-3	ID	24	3	7.90E-03			1.1E+05		7.1E-08
A021	VOC	Carbon Disulfide	75-15-0		24	2	1.60E-03			1.4E+03		1.2E-06
A021	VOC	Cyclohexane	110-82-7	ID	24	1	1.70E-03			1.4E+04		1.2E-07
A021	VOC	1,4-Dichlorobenzene	106-46-7	C	24	1	2.90E-03		1.0E+02	1.4E+04	2.9E-10	2.0E-07
A021	VOC	Methyl Acetate	79-20-9		24	5	1.70E-02			2.5E+05		6.8E-08
A021	VOC	Methylcyclohexane	108-87-2		24	1	2.10E-03			6.1E+03		3.5E-07
A021	VOC	Methylene Chloride	75-09-2	B2	24	4	2.20E-03		2.6E+02	1.2E+04	8.6E-11	1.8E-07
A021	VOC	Toluene	108-88-3	D	24	1	5.60E-04			2.9E+03		2.0E-07
A021	VOC	Trichloroethene	79-01-6	C-B2	24	1	2.10E-03		9.5E+01	1.2E+04	2.2E-10	1.7E-07
A021	SVOC	Acetophenone	98-86-2	D	24	1	1.80E-01			2.5E+04		7.3E-06
A021	SVOC	Anthracene	120-12-7	D	24	2	8.60E-02			2.3E+05		3.8E-07
A021	SVOC	Benzaldehyde	100-52-7		22	3	9.50E-02			1.7E+04		5.5E-06
A021	SVOC	Benzo(a)anthracene	56-55-3	B2	24	5	1.80E-01		2.8E+01		6.3E-08	
A021	SVOC	Benzo(a)pyrene	50-32-8	B2	24	6	2.20E-01		2.9E+00		7.6E-07	
A021	SVOC	Benzo(b)fluoranthene	205-99-2	B2	24	7	2.80E-01		2.8E+01		9.9E-08	
A021	SVOC	Benzo(g,h,i)perylene	191-24-2	D	24	7	1.20E-01			2.3E+04		5.3E-06
A021	SVOC	Benzo(k)fluoranthene	207-08-9	B2	24	3	9.00E-02		2.9E+02		3.1E-09	
A021	SVOC	Biphenyl	92-52-4	D	24	1	1.90E-01			2.6E+04		7.4E-06
A021	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	24	2	3.30E-01		1.8E+03	1.8E+04	1.9E-09	1.9E-05
A021	SVOC	Carbazole	86-74-8	B2	24	1	1.60E-02		1.2E+03		1.4E-10	
A021	SVOC	Chrysene	218-01-9	B2	24	6	1.90E-01		2.8E+03		6.9E-10	
A021	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	24	1	2.70E-02		2.9E+00		9.4E-08	
A021	SVOC	Dibenzofuran	132-64-9	D	24	1	1.50E-02			3.1E+03		4.8E-06
A021	SVOC	Di-n-butylphthalate	84-74-2	D	24	1	8.20E-02			8.8E+04		9.3E-07
A021	SVOC	Fluoranthene	206-44-0	D	24	9	4.00E-01			2.9E+04		1.4E-05
A021	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	24	4	1.10E-01		2.9E+01		3.8E-08	
A021	SVOC	Phenanthrene	85-01-8	D	24	3	3.60E-01			2.0E+04		1.8E-05
A021	SVOC	Pyrene	129-00-0	D	24	8	3.40E-01			2.2E+04		1.6E-05
A021	P/PCB	PCBs (total)	1336-36-3	B2	31	20	6.50E+04		8.8E+00	1.4E+01	7.4E-02	4.5E+03
A021	INORG	Aluminum	7429-90-5	D	24	24	2.60E+04	1.48E+04		1.9E+06		5.8E-03
A021	INORG	Antimony	7440-36-0		24	4	9.50E-01	4.40E-01		8.2E+02		6.2E-04
A021	INORG	Arsenic	7440-38-2	A	24	24	1.06E+01	1.13E+01	2.7E+01	4.4E+02		
A021	INORG	Barium	7440-39-3	D	24	24	1.53E+03	8.38E+01		1.4E+05		1.0E-02
A021	INORG	Beryllium	7440-41-7	B1	24	2	5.00E-01	5.70E-01	7.3E+04	4.0E+03		
A021	INORG	Cadmium	7440-43-9	B1	24	15	1.20E+00	5.52E-01	9.7E+04	1.3E+03	6.7E-11	4.8E-04
A021	INORG	Chromium (total)	7440-47-3		24	24	1.01E+02	2.82E+01	1.5E+04	6.1E+03	5.0E-08	1.2E-02
A021	INORG	Cobalt	7440-48-4	B1	24	24	1.28E+02	1.00E+01	6.2E+04	3.1E+04	1.9E-08	3.8E-03
A021	INORG	Copper	7440-50-8	D	24	24	8.66E+02	1.89E+01		8.2E+04		1.0E-02
A021	INORG	Cyanide (total)	57-12-5	D	24	1	2.30E-01			4.1E+04		5.6E-06
A021	INORG	Iron	7439-89-6	D	24	24	3.42E+04	2.44E+04		6.1E+05		1.6E-02
A021	INORG	Manganese	7439-96-5	D	24	24	7.24E+02	6.76E+02		1.5E+05		3.2E-04
A021	INORG	Mercury	7439-97-6	D	24	20	1.04E+02	7.05E-02		8.7E+01		1.2E+00
A021	INORG	Nickel	7440-02-0	A	24	24	4.64E+02	1.83E+01	7.3E+05	4.1E+04	6.1E-09	1.1E-02
A021	INORG	Selenium	7782-49-2	D	24	9	1.00E+00	3.96E-01		1.0E+04		5.9E-05
A021	INORG	Silver	7440-22-4	D	24	4	5.20E-01			8.8E+03		5.9E-05
A021	INORG	Thallium	7440-28-0		24	4	7.20E-01	8.40E-01		1.4E+02		
A021	INORG	Vanadium	7440-62-2		24	24	3.94E+01	4.18E+01		1.4E+04		
A021	INORG	Zinc	7440-66-6	D	24	24	1.20E+03	5.48E+01		6.1E+05		1.9E-03
A022	VOC	Acetone	67-64-1	ID	6	1	3.70E-03			6.9E+04		5.3E-08
A022	VOC	Benzene	71-43-2	A	6	1	4.10E-04		1.7E+01	1.4E+02	2.4E-10	2.8E-06
A022	VOC	Methylene Chloride	75-09-2	B2	6	2	1.30E-03		2.6E+02	1.2E+04	5.1E-11	1.1E-07
A022	VOC	Toluene	108-88-3	D	6	1	4.73E-04			2.9E+03		1.6E-07
A022	SVOC	Acenaphthene	83-32-9		6	1	1.30E-01			2.9E+04		4.4E-06
A022	SVOC	Anthracene	120-12-7	D	6	3	2.60E-01			2.3E+05		1.2E-06
A022	SVOC	Benzo(a)anthracene	56-55-3	B2	6	6	3.80E-01		2.8E+01		1.3E-07	
A022	SVOC	Benzo(a)pyrene	50-32-8	B2	6	6	3.90E-01		2.9E+00		1.4E-06	
A022	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	6	4.80E-01		2.8E+01		1.7E-07	
A022	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	3	1.90E-01			2.3E+04		8.4E-06

Attachment B.6: Upper-Bound Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A022	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	3	3.10E-01		2.9E+02		1.1E-08	
A022	SVOC	Carbazole	86-74-8	B2	6	1	1.40E-01		1.2E+03		1.2E-09	
A022	SVOC	Chrysene	218-01-9	B2	6	6	4.10E-01		2.8E+03		1.5E-09	
A022	SVOC	Dibenzofuran	132-64-9	D	6	1	5.90E-02			3.1E+03		1.9E-05
A022	SVOC	Fluoranthene	206-44-0	D	6	6	1.40E+00			2.9E+04		4.8E-05
A022	SVOC	Fluorene	86-73-7	D	6	1	1.20E-01			2.4E+04		4.9E-06
A022	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	3	1.90E-01		2.9E+01		6.6E-08	
A022	SVOC	Phenanthrene	85-01-8	D	6	5	1.30E+00			2.0E+04		6.5E-05
A022	SVOC	Pyrene	129-00-0	D	6	6	7.60E-01			2.2E+04		3.5E-05
A022	P/PCB	PCBs (total)	1336-36-3	B2	6	3	5.21E-02		8.8E+00	1.4E+01	5.9E-08	3.6E-03
A022	INORG	Aluminum	7429-90-5	D	6	6	5.76E+03	1.48E+04		1.9E+06		
A022	INORG	Antimony	7440-36-0		6	2	1.41E+03	4.40E-01		8.2E+02		1.7E+00
A022	INORG	Arsenic	7440-38-2	A	6	6	2.46E+01	1.13E+01	2.7E+01	4.4E+02	4.9E-06	3.0E-02
A022	INORG	Barium	7440-39-3	D	6	6	5.03E+01	8.38E+01		1.4E+05		
A022	INORG	Beryllium	7440-41-7	B1	6	4	6.40E-01	5.70E-01	7.3E+04	4.0E+03	9.6E-12	1.8E-05
A022	INORG	Cadmium	7440-43-9	B1	6	6	4.20E-01	5.52E-01	9.7E+04	1.3E+03		
A022	INORG	Chromium (total)	7440-47-3		6	6	8.70E+00	2.82E+01	1.5E+04	6.1E+03		
A022	INORG	Cobalt	7440-48-4	B1	6	6	3.60E+00	1.00E+01	6.2E+04	3.1E+04		
A022	INORG	Copper	7440-50-8	D	6	6	6.54E+02	1.89E+01		8.2E+04		7.8E-03
A022	INORG	Cyanide (amenable)	57-12-5A		6	2	2.20E-01			4.1E+04		5.4E-06
A022	INORG	Cyanide (total)	57-12-5	D	6	3	3.40E-01			4.1E+04		8.3E-06
A022	INORG	Iron	7439-89-6	D	6	6	1.48E+04	2.44E+04		6.1E+05		
A022	INORG	Manganese	7439-96-5	D	6	6	3.33E+02	6.76E+02		1.5E+05		
A022	INORG	Mercury	7439-97-6	D	6	4	6.30E-02	7.05E-02		8.7E+01		
A022	INORG	Nickel	7440-02-0	A	6	6	2.17E+01	1.83E+01	7.3E+05	4.1E+04	4.7E-11	8.3E-05
A022	INORG	Silver	7440-22-4	D	6	1	2.90E+00			8.8E+03		3.3E-04
A022	INORG	Thallium	7440-28-0		6	2	6.50E-01	8.40E-01		1.4E+02		
A022	INORG	Vanadium	7440-62-2		6	6	1.28E+01	4.18E+01		1.4E+04		
A022	INORG	Zinc	7440-66-6	D	6	6	8.37E+01	5.48E+01		6.1E+05		4.7E-05
P205(GM)	VOC	Acetone	67-64-1	ID	1	1	1.20E-02			6.9E+04		1.7E-07
P205(GM)	P/PCB	PCBs (total)	1336-36-3	B2	36	35	5.98E+01		8.8E+00	1.4E+01	6.8E-05	4.2E+00
P205(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.02E+04	1.48E+04		1.9E+06		
P205(GM)	INORG	Arsenic	7440-38-2	A	1	1	6.80E+00	1.13E+01	2.7E+01	4.4E+02		
P205(GM)	INORG	Barium	7440-39-3	D	1	1	4.55E+01	8.38E+01		1.4E+05		
P205(GM)	INORG	Beryllium	7440-41-7	B1	1	1	2.40E-01	5.70E-01	7.3E+04	4.0E+03		
P205(GM)	INORG	Cadmium	7440-43-9	B1	1	1	6.20E-02	5.52E-01	9.7E+04	1.3E+03		
P205(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.60E+01	2.82E+01	1.5E+04	6.1E+03		
P205(GM)	INORG	Cobalt	7440-48-4	B1	1	1	7.30E+00	1.00E+01	6.2E+04	3.1E+04		
P205(GM)	INORG	Copper	7440-50-8	D	1	1	1.53E+01	1.89E+01		8.2E+04		
P205(GM)	INORG	Iron	7439-89-6	D	1	1	1.62E+04	2.44E+04		6.1E+05		
P205(GM)	INORG	Manganese	7439-96-5	D	1	1	1.61E+02	6.76E+02		1.5E+05		
P205(GM)	INORG	Nickel	7440-02-0	A	1	1	1.82E+01	1.83E+01	7.3E+05	4.1E+04		
P205(GM)	INORG	Selenium	7782-49-2	D	1	1	3.90E-01	3.96E-01		1.0E+04		
P205(GM)	INORG	Vanadium	7440-62-2		1	1	2.30E+01	4.18E+01		1.4E+04		
P205(GM)	INORG	Zinc	7440-66-6	D	1	1	3.95E+01	5.48E+01		6.1E+05		
P215_area	P/PCB	PCBs (total)	1336-36-3	B2	66	58	3.89E+02		8.8E+00	1.4E+01	4.4E-04	2.7E+01
P216_east	P/PCB	PCBs (total)	1336-36-3	B2	56	43	1.54E+02		8.8E+00	1.4E+01	1.7E-04	1.1E+01
P216_east	INORG	Aluminum	7429-90-5	D	1	1	1.12E+04	1.48E+04		1.9E+06		
P216_east	INORG	Arsenic	7440-38-2	A	1	1	9.90E+00	1.13E+01	2.7E+01	4.4E+02		
P216_east	INORG	Barium	7440-39-3	D	1	1	9.39E+01	8.38E+01		1.4E+05		7.1E-05
P216_east	INORG	Beryllium	7440-41-7	B1	1	1	3.80E-01	5.70E-01	7.3E+04	4.0E+03		
P216_east	INORG	Cadmium	7440-43-9	B1	1	1	1.10E-01	5.52E-01	9.7E+04	1.3E+03		
P216_east	INORG	Chromium (total)	7440-47-3		1	1	2.16E+01	2.82E+01	1.5E+04	6.1E+03		
P216_east	INORG	Cobalt	7440-48-4	B1	1	1	1.05E+01	1.00E+01	6.2E+04	3.1E+04	7.3E-11	1.5E-05
P216_east	INORG	Copper	7440-50-8	D	1	1	1.09E+01	1.89E+01		8.2E+04		
P216_east	INORG	Iron	7439-89-6	D	1	1	1.94E+04	2.44E+04		6.1E+05		
P216_east	INORG	Manganese	7439-96-5	D	1	1	9.18E+02	6.76E+02		1.5E+05		1.6E-03
P216_east	INORG	Mercury	7439-97-6	D	1	1	3.30E-02	7.05E-02		8.7E+01		
P216_east	INORG	Nickel	7440-02-0	A	1	1	1.20E+01	1.83E+01	7.3E+05	4.1E+04		
P216_east	INORG	Vanadium	7440-62-2		1	1	3.26E+01	4.18E+01		1.4E+04		
P216_east	INORG	Zinc	7440-66-6	D	1	1	4.15E+01	5.48E+01		6.1E+05		
P216_west	VOC	Acetone	67-64-1	ID	4	1	1.50E-02			6.9E+04		2.2E-07
P216_west	VOC	Toluene	108-88-3	D	4	1	8.10E-02			2.9E+03		2.8E-05
P216_west	VOC	Xylenes (total)	1330-20-7	ID	4	1	1.80E-01			1.1E+03		1.7E-04
P216_west	SVOC	2-Methylnaphthalene	91-57-6	ID	4	1	4.50E+00			3.6E+02		1.2E-02
P216_west	SVOC	Phenanthrene	85-01-8	D	4	1	1.10E-01			2.0E+04		5.5E-06
P216_west	P/PCB	PCBs (total)	1336-36-3	B2	76	68	3.13E+02		8.8E+00	1.4E+01	3.5E-04	2.2E+01
P216_west	INORG	Aluminum	7429-90-5	D	4	4	1.57E+04	1.48E+04		1.9E+06		4.4E-04
P216_west	INORG	Antimony	7440-36-0		3	1	1.01E+00	4.40E-01		8.2E+02		7.0E-04
P216_west	INORG	Arsenic	7440-38-2	A	4	4	1.15E+01	1.13E+01	2.7E+01	4.4E+02	7.1E-08	4.4E-04
P216_west	INORG	Barium	7440-39-3	D	4	4	9.14E+01	8.38E+01		1.4E+05		5.3E-05
P216_west	INORG	Beryllium	7440-41-7	B1	4	3	3.70E-01	5.70E-01	7.3E+04	4.0E+03		
P216_west	INORG	Cadmium	7440-43-9	B1	4	3	2.35E-01	5.52E-01	9.7E+04	1.3E+03		
P216_west	INORG	Chromium (total)	7440-47-3		4	4	2.00E+01	2.82E+01	1.5E+04	6.1E+03		
P216_west	INORG	Cobalt	7440-48-4	B1	4	4	1.30E+01	1.00E+01	6.2E+04	3.1E+04	4.7E-10	9.6E-05
P216_west	INORG	Copper	7440-50-8	D	4	4	3.34E+01	1.89E+01		8.2E+04		1.8E-04
P216_west	INORG	Iron	7439-89-6	D	4	4	2.39E+04	2.44E+04		6.1E+05		

Attachment B.6: Upper-Bound Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P216_west	INORG	Manganese	7439-96-5	D	4	4	1.15E+03	6.76E+02		1.5E+05		3.2E-03
P216_west	INORG	Mercury	7439-97-6	D	4	3	6.50E-02	7.05E-02		8.7E+01		
P216_west	INORG	Nickel	7440-02-0	A	4	4	1.71E+01	1.83E+01	7.3E+05	4.1E+04		
P216_west	INORG	Selenium	7782-49-2	D	4	2	6.75E-01	3.96E-01		1.0E+04		2.7E-05
P216_west	INORG	Vanadium	7440-62-2		4	4	3.91E+01	4.18E+01		1.4E+04		
P216_west	INORG	Zinc	7440-66-6	D	4	4	4.95E+01	5.48E+01		6.1E+05		
Plant_Boundary	VOC	Acetone	67-64-1	ID	7	1	5.56E-02			6.9E+04		8.0E-07
Plant_Boundary	VOC	2-Butanone	78-93-3	ID	7	1	3.85E-03			1.1E+05		3.4E-08
Plant_Boundary	VOC	Methyl Acetate	79-20-9		7	2	8.25E-03			2.5E+05		3.3E-08
Plant_Boundary	VOC	Toluene	108-88-3	D	7	2	6.25E-04			2.9E+03		2.2E-07
Plant_Boundary	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	1	5.55E-02		2.8E+01		2.0E-08	
Plant_Boundary	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	6.95E-02		1.8E+03	1.8E+04	3.9E-10	3.9E-06
Plant_Boundary	SVOC	Chrysene	218-01-9	B2	7	1	4.73E-02		2.8E+03		1.7E-10	
Plant_Boundary	SVOC	Fluoranthene	206-44-0	D	7	1	8.78E-02			2.9E+04		3.0E-06
Plant_Boundary	SVOC	Phenanthrene	85-01-8	D	7	1	7.15E-02			2.0E+04		3.6E-06
Plant_Boundary	SVOC	Pyrene	129-00-0	D	7	1	6.63E-02			2.2E+04		3.0E-06
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	8	5	3.13E+01		8.8E+00	1.4E+01	3.5E-05	2.2E+00
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	1.97E+04	1.48E+04		1.9E+06		2.5E-03
Plant_Boundary	INORG	Antimony	7440-36-0		6	3	1.01E+00	4.40E-01		8.2E+02		7.0E-04
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7	1.05E+01	1.13E+01	2.7E+01	4.4E+02		
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	9.14E+01	8.38E+01		1.4E+05		5.3E-05
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	5	6.40E-01	5.70E-01	7.3E+04	4.0E+03	9.6E-12	1.8E-05
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	6	2.35E-01	5.52E-01	9.7E+04	1.3E+03		
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	3.07E+01	2.82E+01	1.5E+04	6.1E+03	1.7E-09	4.1E-04
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	1.44E+01	1.00E+01	6.2E+04	3.1E+04	7.0E-10	1.4E-04
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	4.27E+02	1.89E+01		8.2E+04		5.0E-03
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7	2.39E+04	2.44E+04		6.1E+05		
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	6.81E+02	6.76E+02		1.5E+05		3.1E-05
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	2.45E-01	7.05E-02		8.7E+01		2.0E-03
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	3.89E+01	1.83E+01	7.3E+05	4.1E+04	2.8E-10	5.0E-04
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	3	9.80E-01	3.96E-01		1.0E+04		5.7E-05
Plant_Boundary	INORG	Thallium	7440-28-0		7	1	5.45E-01	8.40E-01		1.4E+02		
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7	3.41E+01	4.18E+01		1.4E+04		
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	1.05E+02	5.48E+01		6.1E+05		8.2E-05
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												

**Attachment B.6: High-End Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A004	VOC	Acetone	67-64-1	ID	9	1	5.60E-02			6.9E+04		8.1E-07
A004	VOC	Methyl Acetate	79-20-9		9	2	5.60E-03			2.5E+05		2.2E-08
A004	VOC	Methylene Chloride	75-09-2	B2	9	1	4.40E-03		2.6E+02	1.2E+04	1.7E-10	3.6E-07
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	9	3	1.50E-01		1.8E+03	1.8E+04	8.5E-10	8.5E-06
A004	SVOC	Di-n-butylphthalate	84-74-2	D	9	2	5.30E-01			8.8E+04		6.0E-06
A004	SVOC	Fluoranthene	206-44-0	D	9	1	5.90E-02			2.9E+04		2.0E-06
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	9	1	2.80E-01			3.6E+02		7.7E-04
A004	SVOC	Phenanthrene	85-01-8	D	9	1	8.90E-02			2.0E+04		4.5E-06
A004	SVOC	Phenol	108-95-2	ID	9	2	1.50E+00			2.6E+05		5.7E-06
A004	SVOC	Pyrene	129-00-0	D	9	1	8.70E-02			2.2E+04		4.0E-06
A004	P/PCB	PCBs (total)	1336-36-3	B2	12	9	1.50E+02		8.8E+00	1.4E+01	1.7E-04	1.0E+01
A004	INORG	Aluminum	7429-90-5	D	9	9	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004	INORG	Arsenic	7440-38-2	A	9	9	1.07E+01	1.13E+01	2.7E+01	4.4E+02		
A004	INORG	Barium	7440-39-3	D	9	9	1.12E+02	8.38E+01		1.4E+05		1.9E-04
A004	INORG	Beryllium	7440-41-7	B1	9	5	1.40E+00	5.70E-01	7.3E+04	4.0E+03	1.1E-10	2.1E-04
A004	INORG	Cadmium	7440-43-9	B1	9	1	7.00E-01	5.52E-01	9.7E+04	1.3E+03	1.5E-11	1.1E-04
A004	INORG	Chromium (total)	7440-47-3		9	9	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004	INORG	Cobalt	7440-48-4	B1	9	9	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004	INORG	Copper	7440-50-8	D	9	9	9.36E+02	1.89E+01		8.2E+04		1.1E-02
A004	INORG	Iron	7439-89-6	D	9	9	3.41E+04	2.44E+04		6.1E+05		1.6E-02
A004	INORG	Manganese	7439-96-5	D	9	9	5.44E+02	6.76E+02		1.5E+05		
A004	INORG	Mercury	7439-97-6	D	9	8	6.00E-01	7.05E-02		8.7E+01		6.1E-03
A004	INORG	Nickel	7440-02-0	A	9	9	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004	INORG	Selenium	7782-49-2	D	9	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A004	INORG	Silver	7440-22-4	D	9	1	2.00E-01			8.8E+03		2.3E-05
A004	INORG	Thallium	7440-28-0		9	4	1.00E+00	8.40E-01		1.4E+02		1.1E-03
A004	INORG	Vanadium	7440-62-2		9	9	5.33E+01	4.18E+01		1.4E+04		8.0E-04
A004	INORG	Zinc	7440-66-6	D	9	9	1.44E+02	5.48E+01		6.1E+05		1.5E-04
A004a_south	P/PCB	PCBs (total)	1336-36-3	B2	45	44	3.82E+01		8.8E+00	1.4E+01	4.3E-05	2.7E+00
A004a_west	VOC	Acetone	67-64-1	ID	5	2	1.50E-02			6.9E+04		2.2E-07
A004a_west	VOC	Chlorobenzene	108-90-7	D	5	2	4.50E-04			6.7E+02		6.7E-07
A004a_west	VOC	Methyl Acetate	79-20-9		5	1	3.50E-03			2.5E+05		1.4E-08
A004a_west	VOC	Methylene Chloride	75-09-2	B2	5	1	4.00E-03		2.6E+02	1.2E+04	1.6E-10	3.3E-07
A004a_west	SVOC	Benzaldehyde	100-52-7		5	1	8.00E-02			1.7E+04		4.6E-06
A004a_west	SVOC	Benzo(a)pyrene	50-32-8	B2	5	1	2.40E-02		2.9E+00		8.3E-08	
A004a_west	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	1	3.80E-02		2.8E+01		1.3E-08	
A004a_west	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01		1.8E+03	1.8E+04	6.8E-10	6.8E-06
A004a_west	SVOC	Di-n-butylphthalate	84-74-2	D	5	1	5.30E-01			8.8E+04		6.0E-06
A004a_west	SVOC	Fluoranthene	206-44-0	D	5	2	3.30E-02			2.9E+04		1.1E-06
A004a_west	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	1	3.20E-02		2.9E+01		1.1E-08	
A004a_west	SVOC	Phenanthrene	85-01-8	D	5	1	1.80E-02			2.0E+04		9.0E-07
A004a_west	SVOC	Phenol	108-95-2	ID	5	1	2.20E-01			2.6E+05		8.3E-07
A004a_west	SVOC	Pyrene	129-00-0	D	5	2	2.50E-02			2.2E+04		1.1E-06
A004a_west	P/PCB	PCBs (total)	1336-36-3	B2	88	84	3.17E+01		8.8E+00	1.4E+01	3.6E-05	2.2E+00
A004a_west	INORG	Aluminum	7429-90-5	D	5	5	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004a_west	INORG	Antimony	7440-36-0		5	1	3.90E-01	4.40E-01		8.2E+02		
A004a_west	INORG	Arsenic	7440-38-2	A	5	5	1.01E+01	1.13E+01	2.7E+01	4.4E+02		
A004a_west	INORG	Barium	7440-39-3	D	5	5	1.18E+02	8.38E+01		1.4E+05		2.4E-04
A004a_west	INORG	Beryllium	7440-41-7	B1	5	3	8.80E-01	5.70E-01	7.3E+04	4.0E+03	4.3E-11	7.8E-05
A004a_west	INORG	Cadmium	7440-43-9	B1	5	3	1.30E-01	5.52E-01	9.7E+04	1.3E+03		
A004a_west	INORG	Chromium (total)	7440-47-3		5	5	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004a_west	INORG	Cobalt	7440-48-4	B1	5	5	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004a_west	INORG	Copper	7440-50-8	D	5	5	3.13E+02	1.89E+01		8.2E+04		3.6E-03
A004a_west	INORG	Cyanide (total)	57-12-5	D	5	1	1.80E-01			4.1E+04		4.4E-06
A004a_west	INORG	Iron	7439-89-6	D	5	5	2.09E+04	2.44E+04		6.1E+05		
A004a_west	INORG	Manganese	7439-96-5	D	5	5	1.28E+03	6.76E+02		1.5E+05		4.0E-03
A004a_west	INORG	Mercury	7439-97-6	D	5	4	1.50E-01	7.05E-02		8.7E+01		9.1E-04
A004a_west	INORG	Nickel	7440-02-0	A	5	5	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004a_west	INORG	Selenium	7782-49-2	D	5	3	7.60E-01	3.96E-01		1.0E+04		3.6E-05
A004a_west	INORG	Thallium	7440-28-0		5	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A004a_west	INORG	Vanadium	7440-62-2		5	5	3.46E+01	4.18E+01		1.4E+04		
A004a_west	INORG	Zinc	7440-66-6	D	5	5	1.48E+02	5.48E+01		6.1E+05		1.5E-04
A005	VOC	Acetone	67-64-1	ID	12	2	3.60E-02			6.9E+04		5.2E-07
A005	VOC	Benzene	71-43-2	A	12	1	1.30E-03		1.7E+01	1.4E+02	7.5E-10	9.0E-06
A005	VOC	2-Butanone	78-93-3	ID	12	2	1.30E-02			1.1E+05		1.2E-07
A005	VOC	Carbon Disulfide	75-15-0		12	1	1.50E-03			1.4E+03		1.1E-06
A005	VOC	Chlorobenzene	108-90-7	D	12	1	7.80E-04			6.7E+02		1.2E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	12	1	1.20E-03			5.2E+03		2.3E-07
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	12	1	7.10E-03			1.4E+03		5.0E-06
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	12	2	2.80E-03		1.0E+02	1.4E+04	2.8E-10	1.9E-07
A005	VOC	Ethyl Benzene	100-41-4	D	12	1	6.40E-04			9.4E+03		6.8E-08
A005	VOC	Methyl Acetate	79-20-9		12	1	1.70E-03			2.5E+05		6.8E-09
A005	VOC	Methylene Chloride	75-09-2	B2	12	2	1.85E-02		2.6E+02	1.2E+04	7.2E-10	1.5E-06
A005	VOC	Tetrachloroethene	127-18-4	C-B2	12	1	1.20E-02		4.0E+01	1.7E+03	3.0E-09	7.2E-06
A005	VOC	Toluene	108-88-3	D	12	1	1.60E-03			2.9E+03		5.6E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	12	1	1.70E-02			8.9E+03		1.9E-06

**Attachment B.6: High-End Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A005	VOC	Xylenes (total)	1330-20-7	ID	12	1	2.10E-03			1.1E+03		2.0E-06
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	2	6.60E-02		2.8E+01		2.3E-08	
A005	SVOC	Chrysene	218-01-9	B2	12	1	4.98E-02		2.8E+03		1.8E-10	
A005	SVOC	Di-n-octylphthalate	117-84-0		12	1	5.65E-02			3.5E+04		1.6E-06
A005	SVOC	Fluoranthene	206-44-0	D	12	1	7.65E-02			2.9E+04		2.6E-06
A005	SVOC	Pyrene	129-00-0	D	12	1	6.50E-02			2.2E+04		3.0E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	21	19	5.86E+02		8.8E+00	1.4E+01	6.6E-04	4.1E+01
A005	INORG	Aluminum	7429-90-5	D	12	12	1.64E+04	1.48E+04		1.9E+06		8.3E-04
A005	INORG	Antimony	7440-36-0		12	2	7.90E-01	4.40E-01		8.2E+02		4.3E-04
A005	INORG	Arsenic	7440-38-2	A	12	12	9.40E+00	1.13E+01	2.7E+01	4.4E+02		
A005	INORG	Barium	7440-39-3	D	12	12	1.30E+02	8.38E+01		1.4E+05		3.2E-04
A005	INORG	Beryllium	7440-41-7	B1	12	8	1.10E+00	5.70E-01	7.3E+04	4.0E+03	7.3E-11	1.3E-04
A005	INORG	Cadmium	7440-43-9	B1	12	6	5.80E-01	5.52E-01	9.7E+04	1.3E+03	2.9E-12	2.1E-05
A005	INORG	Chromium (total)	7440-47-3		12	12	4.49E+01	2.82E+01	1.5E+04	6.1E+03	1.1E-08	2.7E-03
A005	INORG	Cobalt	7440-48-4	B1	12	12	2.65E+01	1.00E+01	6.2E+04	3.1E+04	2.6E-09	5.3E-04
A005	INORG	Copper	7440-50-8	D	12	12	9.86E+01	1.89E+01		8.2E+04		9.7E-04
A005	INORG	Cyanide (total)	57-12-5	D	12	1	2.50E-01			4.1E+04		6.1E-06
A005	INORG	Iron	7439-89-6	D	12	12	3.11E+04	2.44E+04		6.1E+05		1.1E-02
A005	INORG	Manganese	7439-96-5	D	12	12	1.64E+03	6.76E+02		1.5E+05		6.5E-03
A005	INORG	Mercury	7439-97-6	D	12	11	1.70E-01	7.05E-02		8.7E+01		1.1E-03
A005	INORG	Nickel	7440-02-0	A	12	12	2.85E+01	1.83E+01	7.3E+05	4.1E+04	1.4E-10	2.5E-04
A005	INORG	Selenium	7782-49-2	D	12	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A005	INORG	Silver	7440-22-4	D	12	1	1.70E-01			8.8E+03		1.9E-05
A005	INORG	Thallium	7440-28-0		12	3	6.60E-01	8.40E-01		1.4E+02		
A005	INORG	Vanadium	7440-62-2		12	12	7.75E+01	4.18E+01		1.4E+04		2.5E-03
A005	INORG	Zinc	7440-66-6	D	12	12	1.06E+02	5.48E+01		6.1E+05		8.4E-05
A006	VOC	Acetone	67-64-1	ID	17	1	9.70E-03			6.9E+04		1.4E-07
A006	VOC	Chlorobenzene	108-90-7	D	17	1	4.00E+00			6.7E+02		5.9E-03
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	17	2	2.60E+00			5.2E+03		5.0E-04
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	17	2	1.80E+01			1.4E+03		1.3E-02
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	17	2	5.70E+01		1.0E+02	1.4E+04	5.6E-06	3.9E-03
A006	VOC	1,2-Dichloroethane	107-06-2	B2	17	1	1.70E-02		7.6E+00	3.6E+01	2.2E-08	4.8E-04
A006	VOC	Methyl Acetate	79-20-9		17	3	2.40E-03			2.5E+05		9.6E-09
A006	VOC	Methylene Chloride	75-09-2	B2	17	3	1.20E-02		2.6E+02	1.2E+04	4.7E-10	9.9E-07
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	17	2	7.00E-01			8.9E+03		7.8E-05
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	17	2	2.00E+00		1.8E+03	1.8E+04	1.1E-08	1.1E-04
A006	SVOC	2,4-Dimethylphenol	105-67-9		17	1	1.00E-01			1.1E+04		8.9E-06
A006	SVOC	Di-n-octylphthalate	117-84-0		17	4	6.20E+01			3.5E+04		1.8E-03
A006	P/PCB	PCBs (total)	1336-36-3	B2	19	16	1.89E+03		8.8E+00	1.4E+01	2.1E-03	1.3E+02
A006	INORG	Aluminum	7429-90-5	D	17	17	1.68E+04	1.48E+04		1.9E+06		1.0E-03
A006	INORG	Antimony	7440-36-0		14	1	9.40E-01	4.40E-01		8.2E+02		6.1E-04
A006	INORG	Arsenic	7440-38-2	A	17	17	1.12E+01	1.13E+01	2.7E+01	4.4E+02		
A006	INORG	Barium	7440-39-3	D	17	17	1.43E+02	8.38E+01		1.4E+05		4.1E-04
A006	INORG	Beryllium	7440-41-7	B1	17	8	9.10E-01	5.70E-01	7.3E+04	4.0E+03	4.7E-11	8.6E-05
A006	INORG	Cadmium	7440-43-9	B1	17	11	3.30E+00	5.52E-01	9.7E+04	1.3E+03	2.8E-10	2.1E-03
A006	INORG	Chromium (total)	7440-47-3		17	17	4.91E+01	2.82E+01	1.5E+04	6.1E+03	1.4E-08	3.4E-03
A006	INORG	Cobalt	7440-48-4	B1	17	17	1.88E+01	1.00E+01	6.2E+04	3.1E+04	1.4E-09	2.8E-04
A006	INORG	Copper	7440-50-8	D	17	17	2.26E+02	1.89E+01		8.2E+04		2.5E-03
A006	INORG	Iron	7439-89-6	D	17	17	3.66E+04	2.44E+04		6.1E+05		2.0E-02
A006	INORG	Manganese	7439-96-5	D	17	17	1.00E+03	6.76E+02		1.5E+05		2.2E-03
A006	INORG	Mercury	7439-97-6	D	17	15	2.20E-01	7.05E-02		8.7E+01		1.7E-03
A006	INORG	Nickel	7440-02-0	A	17	17	1.87E+02	1.83E+01	7.3E+05	4.1E+04	2.3E-09	4.1E-03
A006	INORG	Selenium	7782-49-2	D	17	6	1.60E+00	3.96E-01		1.0E+04		1.2E-04
A006	INORG	Silver	7440-22-4	D	17	1	5.50E-01			8.8E+03		6.3E-05
A006	INORG	Thallium	7440-28-0		17	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A006	INORG	Vanadium	7440-62-2		17	17	6.01E+01	4.18E+01		1.4E+04		1.3E-03
A006	INORG	Zinc	7440-66-6	D	17	17	1.09E+03	5.48E+01		6.1E+05		1.7E-03
A021	VOC	Acetone	67-64-1	ID	24	2	4.90E-02			6.9E+04		7.1E-07
A021	VOC	2-Butanone	78-93-3	ID	24	3	7.90E-03			1.1E+05		7.1E-08
A021	VOC	Carbon Disulfide	75-15-0		24	2	1.60E-03			1.4E+03		1.2E-06
A021	VOC	Cyclohexane	110-82-7	ID	24	1	1.70E-03			1.4E+04		1.2E-07
A021	VOC	1,4-Dichlorobenzene	106-46-7	C	24	1	2.90E-03		1.0E+02	1.4E+04	2.9E-10	2.0E-07
A021	VOC	Methyl Acetate	79-20-9		24	5	1.70E-02			2.5E+05		6.8E-08
A021	VOC	Methylcyclohexane	108-87-2		24	1	2.10E-03			6.1E+03		3.5E-07
A021	VOC	Methylene Chloride	75-09-2	B2	24	4	2.20E-03		2.6E+02	1.2E+04	8.6E-11	1.8E-07
A021	VOC	Toluene	108-88-3	D	24	1	5.60E-04			2.9E+03		2.0E-07
A021	VOC	Trichloroethene	79-01-6	C-B2	24	1	2.10E-03		9.5E+01	1.2E+04	2.2E-10	1.7E-07
A021	SVOC	Acetophenone	98-86-2	D	24	1	1.80E-01			2.5E+04		7.3E-06
A021	SVOC	Anthracene	120-12-7	D	24	2	8.60E-02			2.3E+05		3.8E-07
A021	SVOC	Benzaldehyde	100-52-7		22	3	9.50E-02			1.7E+04		5.5E-06
A021	SVOC	Benzo(a)anthracene	56-55-3	B2	24	5	1.80E-01		2.8E+01		6.3E-08	
A021	SVOC	Benzo(a)pyrene	50-32-8	B2	24	6	2.20E-01		2.9E+00		7.6E-07	
A021	SVOC	Benzo(b)fluoranthene	205-99-2	B2	24	7	2.80E-01		2.8E+01		9.9E-08	
A021	SVOC	Benzo(g,h,i)perylene	191-24-2	D	24	7	1.20E-01			2.3E+04		5.3E-06
A021	SVOC	Benzo(k)fluoranthene	207-08-9	B2	24	3	9.00E-02		2.9E+02		3.1E-09	
A021	SVOC	Biphenyl	92-52-4	D	24	1	1.90E-01			2.6E+04		7.4E-06

**Attachment B.6: High-End Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A021	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	24	2	3.30E-01		1.8E+03	1.8E+04	1.9E-09	1.9E-05
A021	SVOC	Carbazole	86-74-8	B2	24	1	1.60E-02		1.2E+03		1.4E-10	
A021	SVOC	Chrysene	218-01-9	B2	24	6	1.90E-01		2.8E+03		6.9E-10	
A021	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	24	1	2.70E-02		2.9E+00		9.4E-08	
A021	SVOC	Dibenzofuran	132-64-9	D	24	1	1.50E-02			3.1E+03		4.8E-06
A021	SVOC	Di-n-butylphthalate	84-74-2	D	24	1	8.20E-02			8.8E+04		9.3E-07
A021	SVOC	Fluoranthene	206-44-0	D	24	9	4.00E-01			2.9E+04		1.4E-05
A021	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	24	4	1.10E-01		2.9E+01		3.8E-08	
A021	SVOC	Phenanthrene	85-01-8	D	24	3	3.60E-01			2.0E+04		1.8E-05
A021	SVOC	Pyrene	129-00-0	D	24	8	3.40E-01			2.2E+04		1.6E-05
A021	P/PCB	PCBs (total)	1336-36-3	B2	27	16	1.34E+01		8.8E+00	1.4E+01	1.5E-05	9.3E-01
A021	INORG	Aluminum	7429-90-5	D	24	24	2.60E+04	1.48E+04		1.9E+06		5.8E-03
A021	INORG	Antimony	7440-36-0		24	4	9.50E-01	4.40E-01		8.2E+02		6.2E-04
A021	INORG	Arsenic	7440-38-2	A	24	24	1.06E+01	1.13E+01	2.7E+01	4.4E+02		
A021	INORG	Barium	7440-39-3	D	24	24	1.53E+03	8.38E+01		1.4E+05		1.0E-02
A021	INORG	Beryllium	7440-41-7	B1	24	2	5.00E-01	5.70E-01	7.3E+04	4.0E+03		
A021	INORG	Cadmium	7440-43-9	B1	24	15	1.20E+00	5.52E-01	9.7E+04	1.3E+03	6.7E-11	4.8E-04
A021	INORG	Chromium (total)	7440-47-3		24	24	1.01E+02	2.82E+01	1.5E+04	6.1E+03	5.0E-08	1.2E-02
A021	INORG	Cobalt	7440-48-4	B1	24	24	1.28E+02	1.00E+01	6.2E+04	3.1E+04	1.9E-08	3.8E-03
A021	INORG	Copper	7440-50-8	D	24	24	8.66E+02	1.89E+01		8.2E+04		1.0E-02
A021	INORG	Cyanide (total)	57-12-5	D	24	1	2.30E-01			4.1E+04		5.6E-06
A021	INORG	Iron	7439-89-6	D	24	24	3.42E+04	2.44E+04		6.1E+05		1.6E-02
A021	INORG	Manganese	7439-96-5	D	24	24	7.24E+02	6.76E+02		1.5E+05		3.2E-04
A021	INORG	Mercury	7439-97-6	D	23	19	1.97E+01	7.05E-02		8.7E+01		2.3E-01
A021	INORG	Nickel	7440-02-0	A	24	24	4.64E+02	1.83E+01	7.3E+05	4.1E+04	6.1E-09	1.1E-02
A021	INORG	Selenium	7782-49-2	D	24	9	1.00E+00	3.96E-01		1.0E+04		5.9E-05
A021	INORG	Silver	7440-22-4	D	24	4	5.20E-01			8.8E+03		5.9E-05
A021	INORG	Thallium	7440-28-0		24	4	7.20E-01	8.40E-01		1.4E+02		
A021	INORG	Vanadium	7440-62-2		24	24	3.94E+01	4.18E+01		1.4E+04		
A021	INORG	Zinc	7440-66-6	D	24	24	1.20E+03	5.48E+01		6.1E+05		1.9E-03
P205(GM)	VOC	Acetone	67-64-1	ID	1	1	1.20E-02			6.9E+04		1.7E-07
P205(GM)	P/PCB	PCBs (total)	1336-36-3	B2	27	26	1.24E+01		8.8E+00	1.4E+01	1.4E-05	8.6E-01
P205(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.02E+04	1.48E+04		1.9E+06		
P205(GM)	INORG	Arsenic	7440-38-2	A	1	1	6.80E+00	1.13E+01	2.7E+01	4.4E+02		
P205(GM)	INORG	Barium	7440-39-3	D	1	1	4.55E+01	8.38E+01		1.4E+05		
P205(GM)	INORG	Beryllium	7440-41-7	B1	1	1	2.40E-01	5.70E-01	7.3E+04	4.0E+03		
P205(GM)	INORG	Cadmium	7440-43-9	B1	1	1	6.20E-02	5.52E-01	9.7E+04	1.3E+03		
P205(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.60E+01	2.82E+01	1.5E+04	6.1E+03		
P205(GM)	INORG	Cobalt	7440-48-4	B1	1	1	7.30E+00	1.00E+01	6.2E+04	3.1E+04		
P205(GM)	INORG	Copper	7440-50-8	D	1	1	1.53E+01	1.89E+01		8.2E+04		
P205(GM)	INORG	Iron	7439-89-6	D	1	1	1.62E+04	2.44E+04		6.1E+05		
P205(GM)	INORG	Manganese	7439-96-5	D	1	1	1.61E+02	6.76E+02		1.5E+05		
P205(GM)	INORG	Nickel	7440-02-0	A	1	1	1.82E+01	1.83E+01	7.3E+05	4.1E+04		
P205(GM)	INORG	Selenium	7782-49-2	D	1	1	3.90E-01	3.96E-01		1.0E+04		
P205(GM)	INORG	Vanadium	7440-62-2		1	1	2.30E+01	4.18E+01		1.4E+04		
P205(GM)	INORG	Zinc	7440-66-6	D	1	1	3.95E+01	5.48E+01		6.1E+05		
P215_area	P/PCB	PCBs (total)	1336-36-3	B2	49	46	5.44E+01		8.8E+00	1.4E+01	6.2E-05	3.8E+00
P216_east	P/PCB	PCBs (total)	1336-36-3	B2	40	35	2.14E+01		8.8E+00	1.4E+01	2.4E-05	1.5E+00
P216_east	INORG	Aluminum	7429-90-5	D	1	1	1.12E+04	1.48E+04		1.9E+06		
P216_east	INORG	Arsenic	7440-38-2	A	1	1	9.90E+00	1.13E+01	2.7E+01	4.4E+02		
P216_east	INORG	Barium	7440-39-3	D	1	1	9.39E+01	8.38E+01		1.4E+05		7.1E-05
P216_east	INORG	Beryllium	7440-41-7	B1	1	1	3.80E-01	5.70E-01	7.3E+04	4.0E+03		
P216_east	INORG	Cadmium	7440-43-9	B1	1	1	1.10E-01	5.52E-01	9.7E+04	1.3E+03		
P216_east	INORG	Chromium (total)	7440-47-3		1	1	2.16E+01	2.82E+01	1.5E+04	6.1E+03		
P216_east	INORG	Cobalt	7440-48-4	B1	1	1	1.05E+01	1.00E+01	6.2E+04	3.1E+04	7.3E-11	1.5E-05
P216_east	INORG	Copper	7440-50-8	D	1	1	1.09E+01	1.89E+01		8.2E+04		
P216_east	INORG	Iron	7439-89-6	D	1	1	1.94E+04	2.44E+04		6.1E+05		
P216_east	INORG	Manganese	7439-96-5	D	1	1	9.18E+02	6.76E+02		1.5E+05		1.6E-03
P216_east	INORG	Mercury	7439-97-6	D	1	1	3.30E-02	7.05E-02		8.7E+01		
P216_east	INORG	Nickel	7440-02-0	A	1	1	1.20E+01	1.83E+01	7.3E+05	4.1E+04		
P216_east	INORG	Vanadium	7440-62-2		1	1	3.26E+01	4.18E+01		1.4E+04		
P216_east	INORG	Zinc	7440-66-6	D	1	1	4.15E+01	5.48E+01		6.1E+05		
P216_west	VOC	Acetone	67-64-1	ID	4	1	1.50E-02			6.9E+04		2.2E-07
P216_west	VOC	Toluene	108-88-3	D	4	1	8.10E-02			2.9E+03		2.8E-05
P216_west	VOC	Xylenes (total)	1330-20-7	ID	4	1	1.80E-01			1.1E+03		1.7E-04
P216_west	SVOC	2-Methylnaphthalene	91-57-6	ID	4	1	4.50E+00			3.6E+02		1.2E-02
P216_west	SVOC	Phenanthrene	85-01-8	D	4	1	1.10E-01			2.0E+04		5.5E-06
P216_west	P/PCB	PCBs (total)	1336-36-3	B2	66	60	3.94E+01		8.8E+00	1.4E+01	4.5E-05	2.7E+00
P216_west	INORG	Aluminum	7429-90-5	D	4	4	1.57E+04	1.48E+04		1.9E+06		4.4E-04
P216_west	INORG	Antimony	7440-36-0		3	1	1.01E+00	4.40E-01		8.2E+02		7.0E-04
P216_west	INORG	Arsenic	7440-38-2	A	4	4	1.15E+01	1.13E+01	2.7E+01	4.4E+02	7.1E-08	4.4E-04
P216_west	INORG	Barium	7440-39-3	D	4	4	9.14E+01	8.38E+01		1.4E+05		5.3E-05
P216_west	INORG	Beryllium	7440-41-7	B1	4	3	3.70E-01	5.70E-01	7.3E+04	4.0E+03		
P216_west	INORG	Cadmium	7440-43-9	B1	4	3	2.35E-01	5.52E-01	9.7E+04	1.3E+03		
P216_west	INORG	Chromium (total)	7440-47-3		4	4	2.00E+01	2.82E+01	1.5E+04	6.1E+03		
P216_west	INORG	Cobalt	7440-48-4	B1	4	4	1.30E+01	1.00E+01	6.2E+04	3.1E+04	4.7E-10	9.6E-05

**Attachment B.6: High-End Estimates of Risk and HQ for Routine Worker Exposure to Surface Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P216_west	INORG	Copper	7440-50-8	D	4	4	3.34E+01	1.89E+01		8.2E+04		1.8E-04
P216_west	INORG	Iron	7439-89-6	D	4	4	2.39E+04	2.44E+04		6.1E+05		
P216_west	INORG	Manganese	7439-96-5	D	4	4	1.15E+03	6.76E+02		1.5E+05		3.2E-03
P216_west	INORG	Mercury	7439-97-6	D	4	3	6.50E-02	7.05E-02		8.7E+01		
P216_west	INORG	Nickel	7440-02-0	A	4	4	1.71E+01	1.83E+01	7.3E+05	4.1E+04		
P216_west	INORG	Selenium	7782-49-2	D	4	2	6.75E-01	3.96E-01		1.0E+04		2.7E-05
P216_west	INORG	Vanadium	7440-62-2		4	4	3.91E+01	4.18E+01		1.4E+04		
P216_west	INORG	Zinc	7440-66-6	D	4	4	4.95E+01	5.48E+01		6.1E+05		
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												
4. All concentrations are the maximum detected in an area, except concentrations in bold are 95% UCLs.												

**Attachment B.6: Estimates of Risk and HI for Routine Worker Exposure to Surface Soil with Controls in Place at Certain Locations
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A004	VOC	Acetone	67-64-1	ID	9	1	5.60E-02			6.9E+04		8.1E-07
A004	VOC	Methyl Acetate	79-20-9		9	2	5.60E-03			2.5E+05		2.2E-08
A004	VOC	Methylene Chloride	75-09-2	B2	9	1	4.40E-03		2.6E+02	1.2E+04	1.7E-10	3.6E-07
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	9	3	1.50E-01		1.8E+03	1.8E+04	8.5E-10	8.5E-06
A004	SVOC	Di-n-butylphthalate	84-74-2	D	9	2	5.30E-01			8.8E+04		6.0E-06
A004	SVOC	Fluoranthene	206-44-0	D	9	1	5.90E-02			2.9E+04		2.0E-06
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	9	1	2.80E-01			3.6E+02		7.7E-04
A004	SVOC	Phenanthrene	85-01-8	D	9	1	8.90E-02			2.0E+04		4.5E-06
A004	SVOC	Phenol	108-95-2	ID	9	2	1.50E+00			2.6E+05		5.7E-06
A004	SVOC	Pyrene	129-00-0	D	9	1	8.70E-02			2.2E+04		4.0E-06
A004	P/PCB	PCBs (total)	1336-36-3	B2	10	7	7.30E-01		8.8E+00	1.4E+01	8.3E-07	5.1E-02
A004	INORG	Aluminum	7429-90-5	D	9	9	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004	INORG	Arsenic	7440-38-2	A	9	9	1.07E+01	1.13E+01	2.7E+01	4.4E+02		
A004	INORG	Barium	7440-39-3	D	9	9	1.12E+02	8.38E+01		1.4E+05		1.9E-04
A004	INORG	Beryllium	7440-41-7	B1	9	5	1.40E+00	5.70E-01	7.3E+04	4.0E+03	1.1E-10	2.1E-04
A004	INORG	Cadmium	7440-43-9	B1	9	1	7.00E-01	5.52E-01	9.7E+04	1.3E+03	1.5E-11	1.1E-04
A004	INORG	Chromium (total)	7440-47-3		9	9	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004	INORG	Cobalt	7440-48-4	B1	9	9	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004	INORG	Copper	7440-50-8	D	9	9	9.36E+02	1.89E+01		8.2E+04		1.1E-02
A004	INORG	Iron	7439-89-6	D	9	9	3.41E+04	2.44E+04		6.1E+05		1.6E-02
A004	INORG	Manganese	7439-96-5	D	9	9	5.44E+02	6.76E+02		1.5E+05		
A004	INORG	Mercury	7439-97-6	D	9	8	6.00E-01	7.05E-02		8.7E+01		6.1E-03
A004	INORG	Nickel	7440-02-0	A	9	9	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004	INORG	Selenium	7782-49-2	D	9	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A004	INORG	Silver	7440-22-4	D	9	1	2.00E-01			8.8E+03		2.3E-05
A004	INORG	Thallium	7440-28-0		9	4	1.00E+00	8.40E-01		1.4E+02		1.1E-03
A004	INORG	Vanadium	7440-62-2		9	9	5.33E+01	4.18E+01		1.4E+04		8.0E-04
A004	INORG	Zinc	7440-66-6	D	9	9	1.44E+02	5.48E+01		6.1E+05		1.5E-04
A004a_south	P/PCB	PCBs (total)	1336-36-3	B2	44	43	2.09E+01		8.8E+00	1.4E+01	2.4E-05	1.5E+00
A004a_west	VOC	Acetone	67-64-1	ID	5	2	1.50E-02			6.9E+04		2.2E-07
A004a_west	VOC	Chlorobenzene	108-90-7	D	5	2	4.50E-04			6.7E+02		6.7E-07
A004a_west	VOC	Methyl Acetate	79-20-9		5	1	3.50E-03			2.5E+05		1.4E-08
A004a_west	VOC	Methylene Chloride	75-09-2	B2	5	1	4.00E-03		2.6E+02	1.2E+04	1.6E-10	3.3E-07
A004a_west	SVOC	Benzaldehyde	100-52-7		5	1	8.00E-02			1.7E+04		4.6E-06
A004a_west	SVOC	Benzo(a)pyrene	50-32-8	B2	5	1	2.40E-02		2.9E+00		8.3E-08	
A004a_west	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	1	3.80E-02		2.8E+01		1.3E-08	
A004a_west	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01		1.8E+03	1.8E+04	6.8E-10	6.8E-06
A004a_west	SVOC	Di-n-butylphthalate	84-74-2	D	5	1	5.30E-01			8.8E+04		6.0E-06
A004a_west	SVOC	Fluoranthene	206-44-0	D	5	2	3.30E-02			2.9E+04		1.1E-06
A004a_west	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	1	3.20E-02		2.9E+01		1.1E-08	
A004a_west	SVOC	Phenanthrene	85-01-8	D	5	1	1.80E-02			2.0E+04		9.0E-07
A004a_west	SVOC	Phenol	108-95-2	ID	5	1	2.20E-01			2.6E+05		8.3E-07
A004a_west	SVOC	Pyrene	129-00-0	D	5	2	2.50E-02			2.2E+04		1.1E-06
A004a_west	P/PCB	PCBs (total)	1336-36-3	B2	85	81	1.52E+01		8.8E+00	1.4E+01	1.7E-05	1.1E+00
A004a_west	INORG	Aluminum	7429-90-5	D	5	5	3.18E+04	1.48E+04		1.9E+06		8.9E-03
A004a_west	INORG	Antimony	7440-36-0		5	1	3.90E-01	4.40E-01		8.2E+02		
A004a_west	INORG	Arsenic	7440-38-2	A	5	5	1.01E+01	1.13E+01	2.7E+01	4.4E+02		
A004a_west	INORG	Barium	7440-39-3	D	5	5	1.18E+02	8.38E+01		1.4E+05		2.4E-04
A004a_west	INORG	Beryllium	7440-41-7	B1	5	3	8.80E-01	5.70E-01	7.3E+04	4.0E+03	4.3E-11	7.8E-05
A004a_west	INORG	Cadmium	7440-43-9	B1	5	3	1.30E-01	5.52E-01	9.7E+04	1.3E+03		
A004a_west	INORG	Chromium (total)	7440-47-3		5	5	3.91E+01	2.82E+01	1.5E+04	6.1E+03	7.5E-09	1.8E-03
A004a_west	INORG	Cobalt	7440-48-4	B1	5	5	3.19E+01	1.00E+01	6.2E+04	3.1E+04	3.5E-09	7.1E-04
A004a_west	INORG	Copper	7440-50-8	D	5	5	3.13E+02	1.89E+01		8.2E+04		3.6E-03
A004a_west	INORG	Cyanide (total)	57-12-5	D	5	1	1.80E-01			4.1E+04		4.4E-06
A004a_west	INORG	Iron	7439-89-6	D	5	5	2.09E+04	2.44E+04		6.1E+05		
A004a_west	INORG	Manganese	7439-96-5	D	5	5	1.28E+03	6.76E+02		1.5E+05		4.0E-03
A004a_west	INORG	Mercury	7439-97-6	D	5	4	1.50E-01	7.05E-02		8.7E+01		9.1E-04
A004a_west	INORG	Nickel	7440-02-0	A	5	5	8.68E+01	1.83E+01	7.3E+05	4.1E+04	9.4E-10	1.7E-03
A004a_west	INORG	Selenium	7782-49-2	D	5	3	7.60E-01	3.96E-01		1.0E+04		3.6E-05
A004a_west	INORG	Thallium	7440-28-0		5	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A004a_west	INORG	Vanadium	7440-62-2		5	5	3.46E+01	4.18E+01		1.4E+04		
A004a_west	INORG	Zinc	7440-66-6	D	5	5	1.48E+02	5.48E+01		6.1E+05		1.5E-04
A005	VOC	Acetone	67-64-1	ID	12	2	3.60E-02			6.9E+04		5.2E-07
A005	VOC	Benzene	71-43-2	A	12	1	1.30E-03		1.7E+01	1.4E+02	7.5E-10	9.0E-06
A005	VOC	2-Butanone	78-93-3	ID	12	2	1.30E-02			1.1E+05		1.2E-07
A005	VOC	Carbon Disulfide	75-15-0		12	1	1.50E-03			1.4E+03		1.1E-06
A005	VOC	Chlorobenzene	108-90-7	D	12	1	7.80E-04			6.7E+02		1.2E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	12	1	1.20E-03			5.2E+03		2.3E-07
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	12	1	7.10E-03			1.4E+03		5.0E-06
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	12	2	2.80E-03		1.0E+02	1.4E+04	2.8E-10	1.9E-07
A005	VOC	Ethyl Benzene	100-41-4	D	12	1	6.40E-04			9.4E+03		6.8E-08
A005	VOC	Methyl Acetate	79-20-9		12	1	1.70E-03			2.5E+05		6.8E-09
A005	VOC	Methylene Chloride	75-09-2	B2	12	2	1.85E-02		2.6E+02	1.2E+04	7.2E-10	1.5E-06
A005	VOC	Tetrachloroethene	127-18-4	C-B2	12	1	1.20E-02		4.0E+01	1.7E+03	3.0E-09	7.2E-06
A005	VOC	Toluene	108-88-3	D	12	1	1.60E-03			2.9E+03		5.6E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	12	1	1.70E-02			8.9E+03		1.9E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	12	1	2.10E-03			1.1E+03		2.0E-06
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	2	6.60E-02		2.8E+01		2.3E-08	
A005	SVOC	Chrysene	218-01-9	B2	12	1	4.98E-02		2.8E+03		1.8E-10	

**Attachment B.6: Estimates of Risk and HI for Routine Worker Exposure to Surface Soil with Controls in Place at Certain Locations
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A005	SVOC	Di-n-octylphthalate	117-84-0		12	1	5.65E-02			3.5E+04		1.6E-06
A005	SVOC	Fluoranthene	206-44-0	D	12	1	7.65E-02			2.9E+04		2.6E-06
A005	SVOC	Pyrene	129-00-0	D	12	1	6.50E-02			2.2E+04		3.0E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	19	17	6.71E+00		8.8E+00	1.4E+01	7.6E-06	4.7E-01
A005	INORG	Aluminum	7429-90-5	D	12	12	1.64E+04	1.48E+04		1.9E+06		8.3E-04
A005	INORG	Antimony	7440-36-0		12	2	7.90E-01	4.40E-01		8.2E+02		4.3E-04
A005	INORG	Arsenic	7440-38-2	A	12	12	9.40E+00	1.13E+01	2.7E+01	4.4E+02		
A005	INORG	Barium	7440-39-3	D	12	12	1.30E+02	8.38E+01		1.4E+05		3.2E-04
A005	INORG	Beryllium	7440-41-7	B1	12	8	1.10E+00	5.70E-01	7.3E+04	4.0E+03	7.3E-11	1.3E-04
A005	INORG	Cadmium	7440-43-9	B1	12	6	5.80E-01	5.52E-01	9.7E+04	1.3E+03	2.9E-12	2.1E-05
A005	INORG	Chromium (total)	7440-47-3		12	12	4.49E+01	2.82E+01	1.5E+04	6.1E+03	1.1E-08	2.7E-03
A005	INORG	Cobalt	7440-48-4	B1	12	12	2.65E+01	1.00E+01	6.2E+04	3.1E+04	2.6E-09	5.3E-04
A005	INORG	Copper	7440-50-8	D	12	12	9.86E+01	1.89E+01		8.2E+04		9.7E-04
A005	INORG	Cyanide (total)	57-12-5	D	12	1	2.50E-01			4.1E+04		6.1E-06
A005	INORG	Iron	7439-89-6	D	12	12	3.11E+04	2.44E+04		6.1E+05		1.1E-02
A005	INORG	Manganese	7439-96-5	D	12	12	1.64E+03	6.76E+02		1.5E+05		6.5E-03
A005	INORG	Mercury	7439-97-6	D	12	11	1.70E-01	7.05E-02		8.7E+01		1.1E-03
A005	INORG	Nickel	7440-02-0	A	12	12	2.85E+01	1.83E+01	7.3E+05	4.1E+04	1.4E-10	2.5E-04
A005	INORG	Selenium	7782-49-2	D	12	1	8.10E-01	3.96E-01		1.0E+04		4.1E-05
A005	INORG	Silver	7440-22-4	D	12	1	1.70E-01			8.8E+03		1.9E-05
A005	INORG	Thallium	7440-28-0		12	3	6.60E-01	8.40E-01		1.4E+02		
A005	INORG	Vanadium	7440-62-2		12	12	7.75E+01	4.18E+01		1.4E+04		2.5E-03
A005	INORG	Zinc	7440-66-6	D	12	12	1.06E+02	5.48E+01		6.1E+05		8.4E-05
A006	VOC	Acetone	67-64-1	ID	17	1	9.70E-03			6.9E+04		1.4E-07
A006	VOC	Chlorobenzene	108-90-7	D	17	1	4.00E+00			6.7E+02		5.9E-03
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	17	2	2.60E+00			5.2E+03		5.0E-04
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	17	2	1.80E+01			1.4E+03		1.3E-02
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	17	2	5.70E+01		1.0E+02	1.4E+04	5.6E-06	3.9E-03
A006	VOC	1,2-Dichloroethane	107-06-2	B2	17	1	1.70E-02		7.6E+00	3.6E+01	2.2E-08	4.8E-04
A006	VOC	Methyl Acetate	79-20-9		17	3	2.40E-03			2.5E+05		9.6E-09
A006	VOC	Methylene Chloride	75-09-2	B2	17	3	1.20E-02		2.6E+02	1.2E+04	4.7E-10	9.9E-07
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	17	2	7.00E-01			8.9E+03		7.8E-05
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	17	2	2.00E+00		1.8E+03	1.8E+04	1.1E-08	1.1E-04
A006	SVOC	2,4-Dimethylphenol	105-67-9		17	1	1.00E-01			1.1E+04		8.9E-06
A006	SVOC	Di-n-octylphthalate	117-84-0		17	4	6.20E+01			3.5E+04		1.8E-03
A006	P/PCB	PCBs (total)	1336-36-3	B2	16	13	7.44E+00		8.8E+00	1.4E+01	8.4E-06	5.2E-01
A006	INORG	Aluminum	7429-90-5	D	17	17	1.68E+04	1.48E+04		1.9E+06		1.0E-03
A006	INORG	Antimony	7440-36-0		14	1	9.40E-01	4.40E-01		8.2E+02		6.1E-04
A006	INORG	Arsenic	7440-38-2	A	17	17	1.12E+01	1.13E+01	2.7E+01	4.4E+02		
A006	INORG	Barium	7440-39-3	D	17	17	1.43E+02	8.38E+01		1.4E+05		4.1E-04
A006	INORG	Beryllium	7440-41-7	B1	17	8	9.10E-01	5.70E-01	7.3E+04	4.0E+03	4.7E-11	8.6E-05
A006	INORG	Cadmium	7440-43-9	B1	17	11	3.30E+00	5.52E-01	9.7E+04	1.3E+03	2.8E-10	2.1E-03
A006	INORG	Chromium (total)	7440-47-3		17	17	4.91E+01	2.82E+01	1.5E+04	6.1E+03	1.4E-08	3.4E-03
A006	INORG	Cobalt	7440-48-4	B1	17	17	1.88E+01	1.00E+01	6.2E+04	3.1E+04	1.4E-09	2.8E-04
A006	INORG	Copper	7440-50-8	D	17	17	2.26E+02	1.89E+01		8.2E+04		2.5E-03
A006	INORG	Iron	7439-89-6	D	17	17	3.66E+04	2.44E+04		6.1E+05		2.0E-02
A006	INORG	Manganese	7439-96-5	D	17	17	1.00E+03	6.76E+02		1.5E+05		2.2E-03
A006	INORG	Mercury	7439-97-6	D	17	15	2.20E-01	7.05E-02		8.7E+01		1.7E-03
A006	INORG	Nickel	7440-02-0	A	17	17	1.87E+02	1.83E+01	7.3E+05	4.1E+04	2.3E-09	4.1E-03
A006	INORG	Selenium	7782-49-2	D	17	6	1.60E+00	3.96E-01		1.0E+04		1.2E-04
A006	INORG	Silver	7440-22-4	D	17	1	5.50E-01			8.8E+03		6.3E-05
A006	INORG	Thallium	7440-28-0		17	3	1.30E+00	8.40E-01		1.4E+02		3.2E-03
A006	INORG	Vanadium	7440-62-2		17	17	6.01E+01	4.18E+01		1.4E+04		1.3E-03
A006	INORG	Zinc	7440-66-6	D	17	17	1.09E+03	5.48E+01		6.1E+05		1.7E-03
A015	VOC	2-Butanone	78-93-3	D	3	1	3.80E-03			1.1E+05		3.4E-08
A015	VOC	Ethyl Benzene	100-41-4	D	3	1	6.40E-04			9.4E+03		6.8E-08
A015	VOC	Methyl Acetate	79-20-9		3	1	1.40E-03			2.5E+05		5.6E-09
A015	VOC	Methylene Chloride	75-09-2	B2	3	2	8.80E-03		2.6E+02	1.2E+04	3.4E-10	7.3E-07
A015	VOC	Xylenes (total)	1330-20-7	ID	3	1	5.00E-03			1.1E+03		4.7E-06
A015	SVOC	Acenaphthene	83-32-9		3	1	5.05E-02			2.9E+04		1.7E-06
A015	SVOC	Anthracene	120-12-7	D	3	2	6.38E-02			2.3E+05		2.8E-07
A015	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	2.06E-01		2.8E+01		7.2E-08	
A015	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	2.37E-01		2.9E+00		8.2E-07	
A015	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	3.45E-01		2.8E+01		1.2E-07	
A015	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.55E-01			2.3E+04		6.9E-06
A015	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	1.20E-01		2.9E+02		4.2E-09	
A015	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	4.98E-02		1.8E+03	1.8E+04	2.8E-10	2.8E-06
A015	SVOC	Carbazole	86-74-8	B2	3	2	5.08E-02		1.2E+03		4.4E-10	
A015	SVOC	Chrysene	218-01-9	B2	3	2	2.59E-01		2.8E+03		9.3E-10	
A015	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	2	4.95E-02		2.9E+00		1.7E-07	
A015	SVOC	Di-n-butylphthalate	84-74-2	D	3	1	3.75E-01			8.8E+04		4.3E-06
A015	SVOC	Fluoranthene	206-44-0	D	3	2	5.25E-01			2.9E+04		1.8E-05
A015	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	1.54E-01		2.9E+01		5.3E-08	
A015	SVOC	Naphthalene	91-20-3	C	3	1	4.18E-02			3.0E+02		1.4E-04
A015	SVOC	Phenanthrene	85-01-8	D	3	2	2.87E-01			2.0E+04		1.4E-05
A015	SVOC	Phenol	108-95-2	ID	3	3	1.85E-01			2.6E+05		7.0E-07
A015	SVOC	Pyrene	129-00-0	D	3	2	4.30E-01			2.2E+04		2.0E-05
A015	P/PCB	PCBs (total)	1336-36-3	B2	1	1	6.39E+00		8.8E+00	1.4E+01	7.2E-06	4.5E-01
A015	INORG	Aluminum	7429-90-5	D	3	3	6.93E+03	1.48E+04		1.9E+06		

**Attachment B.6: Estimates of Risk and HI for Routine Worker Exposure to Surface Soil with Controls in Place at Certain Locations
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A015	INORG	Arsenic	7440-38-2	A	3	3	1.70E+00	1.13E+01	2.7E+01	4.4E+02		
A015	INORG	Barium	7440-39-3	D	3	3	5.52E+02	8.38E+01		1.4E+05		3.3E-03
A015	INORG	Cadmium	7440-43-9	B1	3	2	6.95E-01	5.52E-01	9.7E+04	1.3E+03	1.5E-11	1.1E-04
A015	INORG	Chromium (total)	7440-47-3		3	3	3.02E+01	2.82E+01	1.5E+04	6.1E+03	1.4E-09	3.3E-04
A015	INORG	Cobalt	7440-48-4	B1	3	3	3.14E+01	1.00E+01	6.2E+04	3.1E+04	3.4E-09	6.9E-04
A015	INORG	Copper	7440-50-8	D	3	3	1.78E+02	1.89E+01		8.2E+04		1.9E-03
A015	INORG	Iron	7439-89-6	D	3	3	6.75E+03	2.44E+04		6.1E+05		
A015	INORG	Manganese	7439-96-5	D	3	3	1.39E+02	6.76E+02		1.5E+05		
A015	INORG	Mercury	7439-97-6	D	3	3	1.60E+00	7.05E-02		8.7E+01		1.8E-02
A015	INORG	Nickel	7440-02-0	A	3	3	4.53E+01	1.83E+01	7.3E+05	4.1E+04	3.7E-10	6.6E-04
A015	INORG	Silver	7440-22-4	D	3	2	3.00E-01			8.8E+03		3.4E-05
A015	INORG	Thallium	7440-28-0		3	1	7.48E-01	8.40E-01		1.4E+02		
A015	INORG	Vanadium	7440-62-2		3	3	6.60E+00	4.18E+01		1.4E+04		
A015	INORG	Zinc	7440-66-6	D	3	3	9.62E+01	5.48E+01		6.1E+05		6.8E-05
A022	VOC	Acetone	67-64-1	ID	6	1	3.70E-03			6.9E+04		5.3E-08
A022	VOC	Benzene	71-43-2	A	6	1	4.10E-04		1.7E+01	1.4E+02	2.4E-10	2.8E-06
A022	VOC	Methylene Chloride	75-09-2	B2	6	2	1.30E-03		2.6E+02	1.2E+04	5.1E-11	1.1E-07
A022	VOC	Toluene	108-88-3	D	6	1	4.73E-04			2.9E+03		1.6E-07
A022	SVOC	Acenaphthene	83-32-9		6	1	1.30E-01			2.9E+04		4.4E-06
A022	SVOC	Anthracene	120-12-7	D	6	3	2.60E-01			2.3E+05		1.2E-06
A022	SVOC	Benzo(a)anthracene	56-55-3	B2	6	6	3.80E-01		2.8E+01		1.3E-07	
A022	SVOC	Benzo(a)pyrene	50-32-8	B2	6	6	3.90E-01		2.9E+00		1.4E-06	
A022	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	6	4.80E-01		2.8E+01		1.7E-07	
A022	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	3	1.90E-01			2.3E+04		8.4E-06
A022	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	3	3.10E-01		2.9E+02		1.1E-08	
A022	SVOC	Carbazole	86-74-8	B2	6	1	1.40E-01		1.2E+03		1.2E-09	
A022	SVOC	Chrysene	218-01-9	B2	6	6	4.10E-01		2.8E+03		1.5E-09	
A022	SVOC	Dibenzofuran	132-64-9	D	6	1	5.90E-02			3.1E+03		1.9E-05
A022	SVOC	Fluoranthene	206-44-0	D	6	6	1.40E+00			2.9E+04		4.8E-05
A022	SVOC	Fluorene	86-73-7	D	6	1	1.20E-01			2.4E+04		4.9E-06
A022	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	3	1.90E-01		2.9E+01		6.6E-08	
A022	SVOC	Phenanthrene	85-01-8	D	6	5	1.30E+00			2.0E+04		6.5E-05
A022	SVOC	Pyrene	129-00-0	D	6	6	7.60E-01			2.2E+04		3.5E-05
A022	P/PCB	PCBs (total)	1336-36-3	B2	6	3	5.21E-02		8.8E+00	1.4E+01	5.9E-08	3.6E-03
A022	INORG	Aluminum	7429-90-5	D	6	6	5.76E+03	1.48E+04		1.9E+06		
A022	INORG	Antimony	7440-36-0		5	1	4.55E-01	4.40E-01		8.2E+02		1.8E-05
A022	INORG	Arsenic	7440-38-2	A	6	6	2.46E+01	1.13E+01	2.7E+01	4.4E+02	4.9E-06	3.0E-02
A022	INORG	Barium	7440-39-3	D	6	6	5.03E+01	8.38E+01		1.4E+05		
A022	INORG	Beryllium	7440-41-7	B1	6	4	6.40E-01	5.70E-01	7.3E+04	4.0E+03	9.6E-12	1.8E-05
A022	INORG	Cadmium	7440-43-9	B1	6	6	4.20E-01	5.52E-01	9.7E+04	1.3E+03		
A022	INORG	Chromium (total)	7440-47-3		6	6	8.70E+00	2.82E+01	1.5E+04	6.1E+03		
A022	INORG	Cobalt	7440-48-4	B1	6	6	3.60E+00	1.00E+01	6.2E+04	3.1E+04		
A022	INORG	Copper	7440-50-8	D	6	6	6.54E+02	1.89E+01		8.2E+04		7.8E-03
A022	INORG	Cyanide (amenable)	57-12-5A		6	2	2.20E-01			4.1E+04		5.4E-06
A022	INORG	Cyanide (total)	57-12-5	D	6	3	3.40E-01			4.1E+04		8.3E-06
A022	INORG	Iron	7439-89-6	D	6	6	1.48E+04	2.44E+04		6.1E+05		
A022	INORG	Manganese	7439-96-5	D	6	6	3.33E+02	6.76E+02		1.5E+05		
A022	INORG	Mercury	7439-97-6	D	6	4	6.30E-02	7.05E-02		8.7E+01		
A022	INORG	Nickel	7440-02-0	A	6	6	2.17E+01	1.83E+01	7.3E+05	4.1E+04	4.7E-11	8.3E-05
A022	INORG	Silver	7440-22-4	D	6	1	2.90E+00			8.8E+03		3.3E-04
A022	INORG	Thallium	7440-28-0		6	2	6.50E-01	8.40E-01		1.4E+02		
A022	INORG	Vanadium	7440-62-2		6	6	1.28E+01	4.18E+01		1.4E+04		
A022	INORG	Zinc	7440-66-6	D	6	6	8.37E+01	5.48E+01		6.1E+05		4.7E-05
P215_area	P/PCB	PCBs (total)	1336-36-3	B2	46	43	1.62E+01		8.8E+00	1.4E+01	1.8E-05	1.1E+00
P216_west	VOC	Acetone	67-64-1	ID	4	1	1.50E-02			6.9E+04		2.2E-07
P216_west	VOC	Toluene	108-88-3	D	4	1	8.10E-02			2.9E+03		2.8E-05
P216_west	VOC	Xylenes (total)	1330-20-7	ID	4	1	1.80E-01			1.1E+03		1.7E-04
P216_west	SVOC	2-Methylnaphthalene	91-57-6	ID	4	1	4.50E+00			3.6E+02		1.2E-02
P216_west	SVOC	Phenanthrene	85-01-8	D	4	1	1.10E-01			2.0E+04		5.5E-06
P216_west	P/PCB	PCBs (total)	1336-36-3	B2	62	56	1.98E+01		8.8E+00	1.4E+01	2.2E-05	1.4E+00
P216_west	INORG	Aluminum	7429-90-5	D	4	4	1.57E+04	1.48E+04		1.9E+06		4.4E-04
P216_west	INORG	Antimony	7440-36-0		3	1	1.01E+00	4.40E-01		8.2E+02		7.0E-04
P216_west	INORG	Arsenic	7440-38-2	A	4	4	1.15E+01	1.13E+01	2.7E+01	4.4E+02	7.1E-08	4.4E-04
P216_west	INORG	Barium	7440-39-3	D	4	4	9.14E+01	8.38E+01		1.4E+05		5.3E-05
P216_west	INORG	Beryllium	7440-41-7	B1	4	3	3.70E-01	5.70E-01	7.3E+04	4.0E+03		
P216_west	INORG	Cadmium	7440-43-9	B1	4	3	2.35E-01	5.52E-01	9.7E+04	1.3E+03		
P216_west	INORG	Chromium (total)	7440-47-3		4	4	2.00E+01	2.82E+01	1.5E+04	6.1E+03		
P216_west	INORG	Cobalt	7440-48-4	B1	4	4	1.30E+01	1.00E+01	6.2E+04	3.1E+04	4.7E-10	9.6E-05
P216_west	INORG	Copper	7440-50-8	D	4	4	3.34E+01	1.89E+01		8.2E+04		1.8E-04
P216_west	INORG	Iron	7439-89-6	D	4	4	2.39E+04	2.44E+04		6.1E+05		
P216_west	INORG	Manganese	7439-96-5	D	4	4	1.15E+03	6.76E+02		1.5E+05		3.2E-03
P216_west	INORG	Mercury	7439-97-6	D	4	3	6.50E-02	7.05E-02		8.7E+01		
P216_west	INORG	Nickel	7440-02-0	A	4	4	1.71E+01	1.83E+01	7.3E+05	4.1E+04		
P216_west	INORG	Selenium	7782-49-2	D	4	2	6.75E-01	3.96E-01		1.0E+04		2.7E-05
P216_west	INORG	Vanadium	7440-62-2		4	4	3.91E+01	4.18E+01		1.4E+04		
P216_west	INORG	Zinc	7440-66-6	D	4	4	4.95E+01	5.48E+01		6.1E+05		
Plant_Boundary	VOC	Acetone	67-64-1	ID	7	1	5.56E-02			6.9E+04		8.0E-07
Plant_Boundary	VOC	2-Butanone	78-93-3	ID	7	1	3.85E-03			1.1E+05		3.4E-08
Plant_Boundary	VOC	Methyl Acetate	79-20-9		7	2	8.25E-03			2.5E+05		3.3E-08

**Attachment B.6: Estimates of Risk and HI for Routine Worker Exposure to Surface Soil with Controls in Place at Certain Locations
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Routine Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Routine Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
Plant_Boundary	VOC	Toluene	108-88-3	D	7	2	6.25E-04			2.9E+03		2.2E-07
Plant_Boundary	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	1	5.55E-02		2.8E+01		2.0E-08	
Plant_Boundary	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	6.95E-02		1.8E+03	1.8E+04	3.9E-10	3.9E-06
Plant_Boundary	SVOC	Chrysene	218-01-9	B2	7	1	4.73E-02		2.8E+03		1.7E-10	
Plant_Boundary	SVOC	Fluoranthene	206-44-0	D	7	1	8.78E-02			2.9E+04		3.0E-06
Plant_Boundary	SVOC	Phenanthrene	85-01-8	D	7	1	7.15E-02			2.0E+04		3.6E-06
Plant_Boundary	SVOC	Pyrene	129-00-0	D	7	1	6.63E-02			2.2E+04		3.0E-06
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	7	4	1.84E+01		8.8E+00	1.4E+01	2.1E-05	1.3E+00
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	4.85E+03	1.48E+04		1.9E+06		2.5E-03
Plant_Boundary	INORG	Antimony	7440-36-0		6	3	5.70E-01	4.40E-01		8.2E+02		7.0E-04
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7		1.13E+01	2.7E+01	4.4E+02		
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	7.54E+00	8.38E+01		1.4E+05		5.3E-05
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	5	7.00E-02	5.70E-01	7.3E+04	4.0E+03	9.6E-12	1.8E-05
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	6		5.52E-01	9.7E+04	1.3E+03		
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	2.54E+00	2.82E+01	1.5E+04	6.1E+03	1.7E-09	4.1E-04
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	4.35E+00	1.00E+01	6.2E+04	3.1E+04	7.0E-10	1.4E-04
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	4.08E+02	1.89E+01		8.2E+04		5.0E-03
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7		2.44E+04		6.1E+05		
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	4.60E+00	6.76E+02		1.5E+05		3.1E-05
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	1.74E-01	7.05E-02		8.7E+01		2.0E-03
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	2.05E+01	1.83E+01	7.3E+05	4.1E+04	2.8E-10	5.0E-04
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	3	5.84E-01	3.96E-01				
Plant_Boundary	INORG	Thallium	7440-28-0		7	1		8.40E-01				
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7		4.18E+01				
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	5.03E+01	5.48E+01				
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												
4. All concentrations are the maximum detected in an area, except concentrations in bold are 95% UCLs.												
5. The risk estimates are based on the controls in place at the locations identified in Table 4-2 of the CA 725 Report.												

Attachment B.6: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration (Routine Worker Scenario)
GM Powertrain Bedford Facility, Bedford, Indiana

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² ·s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
VOC	Acetone	67-64-1	5.75E-01	3.45E-03	7.95E-04	1.24E-01	1.01E-02	1.14E-05	1.11E-07	5.24E-05	4.39E-06	5.81E+01	2.30E+02	7.38E+02	1.00E+06	1.03E+05
VOC	Benzene	71-43-2	5.89E+01	3.53E-01	1.14E-01	8.80E-02	7.17E-03	9.80E-06	9.50E-08	1.14E-03	2.05E-05	7.81E+01	9.50E+01	4.10E+02	1.75E+03	8.30E+02
VOC	Bromodichloromethane	75-27-4	5.50E+01	3.30E-01	3.28E-02	2.98E-02	2.43E-03	1.06E-05	1.03E-07	1.21E-04	6.68E-06	1.64E+02	5.00E+01	4.63E+02	6.74E+03	2.94E+03
VOC	Bromomethane	74-83-9	1.05E+01	6.30E-02	1.28E-01	7.28E-02	5.93E-03	1.21E-05	1.17E-07	2.70E-03	3.15E-05	9.49E+01	1.62E+03	8.48E+03	1.52E+04	2.83E+03
VOC	2-Butanone	78-93-3	5.20E+00	3.12E-02	1.14E-03	9.49E-02	7.72E-03	9.80E-06	9.50E-08	4.52E-05	4.08E-06	7.21E+01	9.53E+01	3.80E+02	2.40E+05	3.14E+04
VOC	Carbon Disulfide	75-15-0	4.57E+01	2.74E-01	6.20E-01	1.04E-01	8.47E-03	1.00E-05	9.70E-08	7.09E-03	5.11E-05	7.61E+01	3.59E+02	1.51E+03	1.19E+03	5.83E+02
VOC	Chlorobenzene	108-90-7	2.19E+02	1.31E+00	7.60E-02	7.30E-02	5.94E-03	8.70E-06	8.44E-08	2.10E-04	8.79E-06	1.13E+02	1.20E+01	7.44E+01	4.72E+02	6.74E+02
VOC	Chloroethane	75-00-3	1.49E+01	8.94E-02	1.80E-01	1.10E-01	8.96E-03	1.53E-05	1.48E-07	4.80E-03	4.21E-05	6.45E+01	1.01E+03	3.59E+03	5.68E+03	1.26E+03
VOC	Chloroform	67-66-3	3.98E+01	2.39E-01	7.50E-02	1.04E-01	8.47E-03	1.00E-05	9.70E-08	1.19E-03	2.10E-05	1.19E+02	1.97E+02	1.30E+03	7.92E+03	2.79E+03
VOC	Chloromethane	74-87-3	7.80E+00	4.68E-02	1.80E-01	1.26E-01	1.03E-02	6.50E-06	6.30E-08	6.80E-03	5.01E-05	5.05E+01	4.30E+03	1.20E+04	5.33E+03	9.58E+02
VOC	Cumene	98-82-8	3.30E+03	1.98E+01	2.37E+01	6.50E-02	5.29E-03	7.83E-06	7.59E-08	3.41E-03	3.54E-05	1.20E+02	4.50E+00	2.99E+01	6.13E+01	1.23E+03
VOC	Cyclohexane	110-82-7	6.35E+02	3.81E+00	3.98E+00	1.10E-01	8.96E-03	9.14E-06	8.86E-08	5.07E-03	4.32E-05	8.42E+01	9.69E+01	4.50E+02	5.50E+01	2.66E+02
VOC	Dibromochloromethane	124-48-1	6.31E+01	3.79E-01	1.61E-02	1.96E-02	1.60E-03	1.05E-05	1.02E-07	3.54E-05	3.61E-06	2.08E+02	4.90E+00	5.64E+01	2.60E+03	1.25E+03
VOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	3.70E+00	3.90E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	3.81E-05	3.74E-06	1.47E+02	1.36E+00	1.10E+01	1.56E+02	5.94E+02
VOC	1,3-Dichlorobenzene	541-73-1	1.70E+03	1.02E+01	6.33E-02	4.14E-02	3.37E-03	8.85E-06	8.58E-08	1.37E-05	2.25E-06	1.47E+02	2.15E+00	1.75E+01	1.33E+02	1.37E+03
VOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	3.70E+00	4.98E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	4.86E-05	4.23E-06	1.47E+02	1.00E+00	8.12E+00	7.38E+01	2.81E+02
VOC	Dichlorodifluoromethane	75-71-8	1.30E+02	7.80E-01	7.01E+00	8.00E-02	6.51E-03	8.00E-06	7.76E-08	1.38E-02	7.12E-05	1.21E+02	4.85E+03	3.24E+04	2.80E+02	6.15E+02
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	1.90E-01	1.15E-01	7.42E-02	6.04E-03	1.05E-05	1.02E-07	1.48E-03	2.34E-05	9.90E+01	2.27E+02	1.24E+03	5.06E+03	1.57E+03
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.04E-01	2.01E-02	1.04E-01	8.47E-03	9.90E-06	9.60E-08	5.42E-04	1.41E-05	9.90E+01	7.89E+01	4.31E+02	8.52E+03	1.77E+03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.13E-01	8.35E-02	7.36E-02	5.99E-03	1.13E-05	1.10E-07	1.01E-03	1.93E-05	9.69E+01	2.03E+02	1.09E+03	3.50E+03	1.15E+03
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	3.15E-01	1.93E-01	7.07E-02	5.76E-03	1.19E-05	1.15E-07	1.63E-03	2.45E-05	9.69E+01	3.33E+02	1.78E+03	6.30E+03	2.84E+03
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.18E+00	1.62E-01	7.50E-02	6.11E-03	7.80E-06	7.56E-08	2.83E-04	1.02E-05	1.06E+02	9.60E+00	5.63E+01	1.69E+02	3.90E+02
VOC	2-Hexanone	591-78-6	1.48E+01	8.90E-02	1.35E-02	1.10E-02	1.03E-05	9.99E-08	1.33E-03	2.22E-05	1.00E+02	1.16E+01	6.43E+01	1.75E+04	3.31E+03	
VOC	Methyl Acetate	79-20-9	1.66E+00	9.98E-03	5.75E-05	1.23E-01	9.99E-03	1.10E-05	1.07E-07	4.13E-06	1.23E-06	7.41E+01	2.16E+02	8.85E+02	2.44E+05	2.66E+04
VOC	Methyl tert-butyl ether	1634-04-4	1.15E+01	6.89E-02	1.20E-02	8.59E-02	7.00E-03	1.01E-05	9.80E-08	3.26E-04	1.10E-05	8.82E+01	2.50E+02	1.22E+03	5.10E+04	8.70E+03
VOC	4-Methyl-2-pentanone	108-10-1	1.90E+01	1.14E-01	2.82E-03	7.50E-02	6.11E-03	7.80E-06	7.56E-08	5.36E-05	4.44E-06	1.00E+02	1.99E+01	1.10E+02	1.90E+04	4.06E+03
VOC	Methylcyclohexane	108-87-2	8.65E+02	5.19E+00	8.79E+00	9.86E-02	8.03E-03	8.52E-06	8.26E-08	6.73E-03	4.98E-05	9.82E+01	4.60E+01	2.50E+02	1.40E+01	9.72E+01
VOC	Methylene Chloride	75-09-2	1.17E+01	7.02E-02	4.49E-02	1.01E-01	8.22E-03	1.17E-05	1.13E-07	1.37E-03	2.25E-05	8.49E+01	4.33E+02	2.03E+03	1.30E+04	2.31E+03
VOC	Tetrachloroethene	127-18-4	1.55E+02	9.30E-01	3.77E-01	7.20E-02	5.86E-03	8.20E-06	7.95E-08	1.33E-03	2.21E-05	1.66E+02	1.86E+01	1.70E+02	2.00E+02	2.20E+02
VOC	Toluene	108-88-3	1.82E+02	1.09E+00	1.36E-01	8.70E-02	7.08E-03	8.60E-06	8.34E-08	5.24E-04	1.39E-05	9.21E+01	2.84E+01	1.45E+02	5.26E+02	6.40E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.07E+01	2.91E-02	3.00E-02	2.44E-03	8.23E-06	7.98E-08	4.37E-06	1.27E-06	1.81E+02	4.31E-01	4.32E+00	3.00E+02	3.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	6.60E-01	3.53E-01	7.80E-02	6.35E-03	8.80E-06	8.53E-08	1.80E-03	2.57E-05	1.33E+02	1.24E+02	9.12E+02	1.33E+03	1.10E+03
VOC	Trichloroethene	79-01-6	1.66E+02	9.96E-01	2.11E-01	7.90E-02	6.43E-03	9.10E-06	8.83E-08	7.92E-04	1.71E-05	1.31E+02	7.35E+01	5.33E+02	1.10E+03	1.25E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.30E+03	7.80E+00	9.83E+00	7.80E-02	6.35E-03	8.20E-06	7.95E-08	4.24E-03	3.95E-05	1.87E+02	3.32E+02	3.33E+03	1.70E+02	1.66E+03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.12E-01	5.55E-01	1.06E-01	8.63E-03	1.23E-05	1.19E-07	1.01E-02	6.09E-05	6.25E+01	2.98E+03	1.03E+04	2.76E+03	8.70E+02
VOC	Xylenes (total)	1330-20-7	3.86E+02	2.32E+00	1.38E-01	7.80E-02	6.35E-03	8.75E-06	8.48E-08	2.37E-04	9.35E-06	1.06E+02	7.99E+00	4.69E+01	1.75E+02	4.27E+02
SVOC	Acenaphthene	83-32-9	7.08E+03	4.25E+01	3.18E-03	4.21E-02	3.43E-03	7.69E-06	7.46E-08	1.71E-07	2.51E-07	1.54E+02	2.50E-03	2.13E-02	4.24E+00	1.81E+02
SVOC	Acenaphthylene	208-96-8	4.90E+03	2.94E+01	2.31E-03	4.42E-02	3.60E-03	7.44E-06	7.22E-08	1.88E-07	2.63E-07	1.52E+02	9.12E-04	7.67E-03	1.61E+01	4.75E+02
SVOC	Acetophenone	98-86-2	4.10E+01	2.46E-01	2.19E-04	8.00E-02	6.51E-03	8.00E-06	7.76E-08	2.88E-06	1.03E-06	1.20E+02	3.97E-01	2.64E+00	6.13E+03	2.12E+03
SVOC	Anthracene	120-12-7	2.95E+04	1.77E+02	1.34E-03	3.24E-02	2.64E-03	7.74E-06	7.51E-08	1.34E-08	7.04E-08	1.78E+02	2.67E-06	2.63E-05	4.34E-02	7.69E+00
SVOC	Benzaldehyde	100-52-7	2.85E+01	1.71E-01	4.86E-04	7.21E-02	5.87E-03	9.07E-06	8.80E-08	7.20E-06	1.63E-06	1.06E+02	9.00E-01	5.28E+00	3.00E+03	8.12E+02
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	2.39E+03	6.85E-05	5.10E-02	4.15E-03	9.00E-06	8.73E-08	1.03E-10	6.16E-09	2.28E+02	1.05E-07	1.32E-06	9.40E-03	2.24E+01
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	6.12E+03	2.32E-05	4.30E-02	3.50E-03	9.00E-06	8.73E-08	1.82E-11	2.59E-09	2.52E+02	5.49E-09	7.65E-08	1.62E-03	9.91E+00
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	7.38E+03	2.28E-03	2.26E-02	1.84E-03	5.56E-06	5.39E-08	3.80E-10	1.18E-08	2.52E+02	5.00E-07	6.97E-06	1.50E-03	1.11E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	1.60E+06	9.60E+03	2.88E-06	2.03E-02	1.65E-03	5.20E-06	5.04E-08	3.81E-12	1.18E-09	2.76E+02	1.01E-10	1.54E-09	2.60E-04	2.50E+00
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	7.38E+03	1.70E-05	2.26E-02	1.84E-03	5.56E-06	5.39E-08	7.64E-12	1.68E-09	2.52E+02	2.00E-09	2.79E-08	8.00E-04	5.90E+00
SVOC	Biphenyl	92-52-4	1.05E+04	6.29E+01	6.13E-03	4.04E-02	3.29E-03	8.15E-06	7.90E-08	2.13E-07	2.80E-07	1.54E+02	9.64E-03	8.21E-02	6.03E+00	3.80E+02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	9.06E+04	2.09E-06	3.51E-02	2.86E-03	3.66E-06	3.55E-08	3.03E-13	3.34E-10	3.91E+02	6.45E-06	1.39E-04	3.40E-01	3.08E+04
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	3.45E+02	2.59E-05	1.74E-02	1.42E-03	4.83E-06	4.68E-08	1.60E-10	7.68E-09	3.12E+02	8.25E-06	1.42E-04	2.69E+00	9.28E+02
SVOC	Caprolactam	105-60-2	6.51E-01	3.91E-03	5.17E-07	6.54E-02	5.33E-03	8.99E-06	8.72E-08	5.77E-07	4.61E-07	1.13E+02	1.60E-03	1.00E-02	7.72E+05	7.97E+04
SVOC	Carbazole	86-74-8	3.39E+03	2.03E+01	3.13E-07	3.90E-02	3.18E-03	7.03E-06	6.82E-08	2.24E-09	2.87E-08	1.67E+02	5.19E-07	4.79E-06	7.48E+00	1.53E+02
SVOC	4-Chloroaniline	106-47-8	6.61E+01	3.97E-01	6.80E-06	4.83E-02	3.93E-03	1.01E-05	9.80E-08	1.66E-07	2.48E-07	1.28E+02	1.23E-02	8.67E-02	5.30E+03	2.63E+03
SVOC	Chrysene	218-01-9	3.98E+05	2.39E+03	1.94E-03	2.48E-02	2.02E-03	6.21E-06	6.02E-08	1.10E-09	2.02E-08	2.28E+02	6.23E-09	7.86E-08	1.60E-03	3.82E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	3.80E+06	2.28E+04	3.02E-07	2.02E-02	1.64E-03	5.18E-06	5.02E-08	1.47E-12	7.37E-10	2.78E+02	1.00E-10	1.54E-09	2.49E-03	5.68E+01
SVOC	Dibenzofuran	132-64-9	1.12E+04	6.74E+01	2.57E-04	2.70E-02	2.20E-03	5.93E-06	5.75E-08	6.12E-09	4.75E-08	1.68E+02	1.80E-04	1.67E-03	1.00E+01	6.75E+02

Attachment B.6: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration (Routine Worker Scenario)
GM Powertrain Bedford Facility, Bedford, Indiana

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
SVOC	Diethylphthalate	84-66-2	2.88E+02	1.73E+00	9.25E-06	2.56E-02	2.08E-03	6.35E-06	6.16E-08	2.93E-08	1.04E-07	2.22E+02	1.65E-03	2.03E-02	1.08E+03	1.97E+03
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.25E+00	4.10E-05	5.84E-02	4.76E-03	8.69E-06	8.43E-08	1.37E-07	2.24E-07	1.22E+02	9.80E-02	6.62E-01	7.87E+03	1.07E+04
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.03E+02	1.93E-08	4.38E-02	3.57E-03	7.86E-06	7.62E-08	2.48E-10	9.56E-09	2.78E+02	7.30E-05	1.12E-03	1.12E+01	2.28E+03
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	4.15E-01	1.53E-05	3.27E-02	2.66E-03	7.26E-06	7.04E-08	1.43E-07	2.30E-07	1.82E+02	5.67E-04	5.71E-03	1.82E+02	9.36E+01
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	4.99E+05	1.37E-03	1.51E-02	1.23E-03	3.58E-06	3.47E-08	2.28E-12	9.17E-10	3.91E+02	2.60E-06	5.61E-05	2.00E-02	9.98E+03
SVOC	Fluoranthene	206-44-0	1.07E+05	6.42E+02	3.30E-04	3.02E-02	2.46E-03	6.35E-06	6.16E-08	9.00E-10	1.82E-08	2.02E+02	7.80E-06	8.72E-05	2.06E-01	1.32E+02
SVOC	Fluorene	86-73-7	1.38E+04	8.28E+01	1.31E-03	3.63E-02	2.96E-03	7.88E-06	7.64E-08	3.14E-08	1.08E-07	1.66E+02	6.33E-04	5.81E-03	1.98E+00	1.64E+02
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	3.30E+02	2.71E-02	5.42E-02	4.41E-03	5.91E-06	5.73E-08	2.40E-07	2.97E-07	2.85E+02	1.80E-05	2.83E-04	6.20E+00	2.05E+03
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	3.22E+02	1.67E-01	5.61E-02	4.57E-03	6.16E-06	5.97E-08	1.57E-06	7.60E-07	2.61E+02	2.21E-01	3.19E+00	3.23E+00	1.04E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.08E+04	3.28E-05	1.90E-02	1.55E-03	5.66E-06	5.49E-08	3.36E-12	1.11E-09	2.76E+02	1.00E-10	1.53E-09	2.20E-05	4.58E-01
SVOC	2-Methylnaphthalene	91-57-6	6.23E+03	3.74E+01	1.06E-02	9.86E-02	8.03E-03	7.75E-06	7.52E-08	1.50E-06	7.44E-07	1.42E+02	5.50E-02	4.32E-01	2.46E+01	9.22E+02
SVOC	Methylphenol (total)	1319-77-3	8.60E+01	5.16E-01	1.77E-05	7.40E-02	6.03E-03	1.00E-05	9.70E-08	2.19E-07	2.84E-07	1.08E+02			2.30E+04	1.42E+04
SVOC	Naphthalene	91-20-3	2.00E+03	1.20E+01	9.90E-03	5.90E-02	4.80E-03	7.50E-06	7.27E-08	2.61E-06	9.80E-07	1.28E+02	8.50E-02	6.02E-01	3.10E+01	3.75E+02
SVOC	Phenanthrene	85-01-8	1.40E+04	8.40E+01	4.76E-04	3.33E-02	2.71E-03	7.47E-06	7.24E-08	1.07E-08	6.29E-08	1.78E+02	1.12E-04	1.10E-03	1.15E+00	9.67E+01
SVOC	Phenol	108-95-2	2.88E+01	1.73E-01	8.15E-06	8.20E-02	6.68E-03	9.10E-06	8.83E-08	3.47E-07	3.58E-07	9.41E+01	2.76E-01	1.44E+00	8.28E+04	2.25E+04
SVOC	Pyrene	129-00-0	1.05E+05	6.30E+02	2.26E-04	2.72E-02	2.21E-03	7.24E-06	7.02E-08	5.99E-10	1.49E-08	2.02E+02	4.59E-06	5.13E-05	1.35E-01	8.51E+01
P/PCB	PCBs (total)	1336-36-3	2.45E+06	1.47E+04	4.09E-02	8.00E-02	6.51E-03	1.00E-05	9.70E-08	1.20E-08	6.65E-08	3.28E+02	7.71E-05	1.40E-03	1.20E-02	1.76E+02
INORG	Aluminum	7429-90-5		1.50E+03								2.70E+01				
INORG	Antimony	7440-36-0		4.50E+01								1.22E+02				
INORG	Arsenic	7440-38-2		2.90E+01								7.49E+01				
INORG	Barium	7440-39-3		4.10E+01								1.37E+02				
INORG	Beryllium	7440-41-7		7.90E+02								9.01E+00				
INORG	Cadmium	7440-43-9		7.50E+01								1.12E+02				
INORG	Chromium (total)	7440-47-3		1.90E+01								5.20E+01				
INORG	Cobalt	7440-48-4		4.50E+01								5.89E+01				
INORG	Copper	7440-50-8		3.50E+01								6.35E+01				
INORG	Cyanide (amenable)	57-12-5A		9.90E+00								2.60E+01				
INORG	Cyanide (total)	57-12-5		9.90E+00								2.60E+01				
INORG	Iron	7439-89-6		2.50E+01								5.58E+01				
INORG	Lead	7439-92-1		9.00E+02								2.07E+02				
INORG	Manganese	7439-96-5		6.50E+01								5.49E+01				
INORG	Mercury	7439-97-6		1.00E+03	1.45E-01	3.07E-02	2.50E-03	6.30E-06	6.11E-08	2.40E-07	2.97E-07	2.01E+02	1.96E-03	2.17E-02	5.60E-02	5.60E+01
INORG	Nickel	7440-02-0		6.50E+01								5.87E+01				
INORG	Selenium	7782-49-2		5.00E+00								7.90E+01				
INORG	Silver	7440-22-4		8.30E+00								1.08E+02				
INORG	Thallium	7440-28-0		7.10E+01								2.04E+02				
INORG	Vanadium	7440-62-2		1.00E+03								5.09E+01				
INORG	Zinc	7440-66-6		6.20E+01								6.54E+01				
Notes:	Soil bulk density	kg/L	ρ _b	1.5E+00												
	Soil particle density	kg/L	ρ _s	2.65E+00												
	Soil porosity	L/L-soil	n	4.30E-01												
	Soil water content	L/L-soil	θ _w	0.15												
	Soil air-filled porosity	L/L-soil	θ _a	0.28												
	Soil organic carbon fraction	unitless	f _{oc}	0.006												
	Averaging period	year	ED	25												
		s	ED	7.88E+08												
	Molar Gas Constant	L-mmHg/mole-°K	R	62.411												
	Temperature	°C	T	10												
		°K	T	290												

Attachment B.6: Air Dispersion Factor 'C/Q' for Inhalation of Vapors and Particulates GM Powertrain Bedford Facility, Bedford, Indiana		
		Routine Worker
Exposure Area (ft ²)	ft ²	148' x 148'
C/Q (Vapor)	kg/m3 per kg/m2-s	14.53
C/Q (Particulate)	kg/m3 per kg/m2-s	11.01

**Attachment B.6: Estimated Concentrations in Ambient Air from Soil
(Routine Worker Scenario)
GM Powertrain Bedford Facility, Bedford, Indiana**

Chem Group	Chemical	CASRN	C _{air} Used			
			C _{soil} (mg/kg)	C _{source} (mg/kg)	Vapor	PM ₁₀
					C _{air} (mg/m ³)	C _{air} (mg/m ³)
VOC	Acetone	67-64-1	1.00E+00	1.00E+00	6.38E-05	2.34E-10
VOC	Benzene	71-43-2	1.00E+00	1.00E+00	2.98E-04	2.34E-10
VOC	Bromodichloromethane	75-27-4	1.00E+00	1.00E+00	9.71E-05	2.34E-10
VOC	Bromomethane	74-83-9	1.00E+00	1.00E+00	4.58E-04	2.34E-10
VOC	2-Butanone	78-93-3	1.00E+00	1.00E+00	5.93E-05	2.34E-10
VOC	Carbon Disulfide	75-15-0	1.00E+00	1.00E+00	7.43E-04	2.34E-10
VOC	Chlorobenzene	108-90-7	1.00E+00	1.00E+00	1.28E-04	2.34E-10
VOC	Chloroethane	75-00-3	1.00E+00	1.00E+00	6.11E-04	2.34E-10
VOC	Chloroform	67-66-3	1.00E+00	1.00E+00	3.05E-04	2.34E-10
VOC	Chloromethane	74-87-3	1.00E+00	1.00E+00	7.28E-04	2.34E-10
VOC	Cumene	98-82-8	1.00E+00	1.00E+00	5.15E-04	2.34E-10
VOC	Cyclohexane	110-82-7	1.00E+00	1.00E+00	6.28E-04	2.34E-10
VOC	Dibromochloromethane	124-48-1	1.00E+00	1.00E+00	5.25E-05	2.34E-10
VOC	1,2-Dichlorobenzene	95-50-1	1.00E+00	1.00E+00	5.44E-05	2.34E-10
VOC	1,3-Dichlorobenzene	541-73-1	1.00E+00	1.00E+00	3.27E-05	2.34E-10
VOC	1,4-Dichlorobenzene	106-46-7	1.00E+00	1.00E+00	6.15E-05	2.34E-10
VOC	Dichlorodifluoromethane	75-71-8	1.00E+00	1.00E+00	1.03E-03	2.34E-10
VOC	1,1-Dichloroethane	75-34-3	1.00E+00	1.00E+00	3.40E-04	2.34E-10
VOC	1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	2.05E-04	2.34E-10
VOC	cis-1,2-Dichloroethene	156-59-2	1.00E+00	1.00E+00	2.80E-04	2.34E-10
VOC	trans-1,2-Dichloroethene	156-60-5	1.00E+00	1.00E+00	3.56E-04	2.34E-10
VOC	Ethyl Benzene	100-41-4	1.00E+00	1.00E+00	1.48E-04	2.34E-10
VOC	2-Hexanone	591-78-6	1.00E+00	1.00E+00	3.22E-04	2.34E-10
VOC	Methyl Acetate	79-20-9	1.00E+00	1.00E+00	1.79E-05	2.34E-10
VOC	Methyl tert-butyl ether	1634-04-4	1.00E+00	1.00E+00	1.59E-04	2.34E-10
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+00	1.00E+00	6.46E-05	2.34E-10
VOC	Methylcyclohexane	108-87-2	1.00E+00	1.00E+00	7.24E-04	2.34E-10
VOC	Methylene Chloride	75-09-2	1.00E+00	1.00E+00	3.27E-04	2.34E-10
VOC	Tetrachloroethene	127-18-4	1.00E+00	1.00E+00	3.22E-04	2.34E-10
VOC	Toluene	108-88-3	1.00E+00	1.00E+00	2.02E-04	2.34E-10
VOC	1,2,4-Trichlorobenzene	120-82-1	1.00E+00	1.00E+00	1.84E-05	2.34E-10
VOC	1,1,1-Trichloroethane	71-55-6	1.00E+00	1.00E+00	3.74E-04	2.34E-10
VOC	Trichloroethene	79-01-6	1.00E+00	1.00E+00	2.48E-04	2.34E-10
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.00E+00	1.00E+00	5.74E-04	2.34E-10
VOC	Vinyl Chloride	75-01-4	1.00E+00	1.00E+00	8.85E-04	2.34E-10
VOC	Xylenes (total)	1330-20-7	1.00E+00	1.00E+00	1.36E-04	2.34E-10
SVOC	Acenaphthene	83-32-9	1.00E+00	1.00E+00	3.64E-06	2.34E-10
SVOC	Acenaphthylene	208-96-8	1.00E+00	1.00E+00	3.83E-06	2.34E-10
SVOC	Acetophenone	98-86-2	1.00E+00	1.00E+00	1.50E-05	2.34E-10
SVOC	Anthracene	120-12-7	1.00E+00	1.00E+00	1.02E-06	2.34E-10
SVOC	Benzaldehyde	100-52-7	1.00E+00	1.00E+00	2.37E-05	2.34E-10
SVOC	Benzo(a)anthracene	56-55-3	1.00E+00	1.00E+00	8.96E-08	2.34E-10
SVOC	Benzo(a)pyrene	50-32-8	1.00E+00	1.00E+00	3.76E-08	2.34E-10

**Attachment B.6: Estimated Concentrations in Ambient Air from Soil
(Routine Worker Scenario)
GM Powertrain Bedford Facility, Bedford, Indiana**

Chem Group	Chemical	CASRN	C _{air} Used			
			C _{soil} (mg/kg)	C _{source} (mg/kg)	Vapor	PM ₁₀
					C _{air} (mg/m ³)	C _{air} (mg/m ³)
SVOC	Benzo(b)fluoranthene	205-99-2	1.00E+00	1.00E+00	1.72E-07	2.34E-10
SVOC	Benzo(g,h,i)perylene	191-24-2	1.00E+00	1.00E+00	1.72E-08	2.34E-10
SVOC	Benzo(k)fluoranthene	207-08-9	1.00E+00	1.00E+00	2.44E-08	2.34E-10
SVOC	Biphenyl	92-52-4	1.00E+00	1.00E+00	4.07E-06	2.34E-10
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.00E+00	1.00E+00	4.86E-09	2.34E-10
SVOC	Butylbenzylphthalate	85-68-7	1.00E+00	1.00E+00	1.12E-07	2.34E-10
SVOC	Caprolactam	105-60-2	1.00E+00	1.00E+00	6.70E-06	2.34E-10
SVOC	Carbazole	86-74-8	1.00E+00	1.00E+00	4.18E-07	2.34E-10
SVOC	4-Chloroaniline	106-47-8	1.00E+00	1.00E+00	3.60E-06	2.34E-10
SVOC	Chrysene	218-01-9	1.00E+00	1.00E+00	2.93E-07	2.34E-10
SVOC	Dibenz(a,h)anthracene	53-70-3	1.00E+00	1.00E+00	1.07E-08	2.34E-10
SVOC	Dibenzofuran	132-64-9	1.00E+00	1.00E+00	6.90E-07	2.34E-10
SVOC	Diethylphthalate	84-66-2	1.00E+00	1.00E+00	1.51E-06	2.34E-10
SVOC	2,4-Dimethylphenol	105-67-9	1.00E+00	1.00E+00	3.26E-06	2.34E-10
SVOC	Di-n-butylphthalate	84-74-2	1.00E+00	1.00E+00	1.39E-07	2.34E-10
SVOC	2,6-Dinitrotoluene	606-20-2	1.00E+00	1.00E+00	3.34E-06	2.34E-10
SVOC	Di-n-octylphthalate	117-84-0	1.00E+00	1.00E+00	1.33E-08	2.34E-10
SVOC	Fluoranthene	206-44-0	1.00E+00	1.00E+00	2.65E-07	2.34E-10
SVOC	Fluorene	86-73-7	1.00E+00	1.00E+00	1.56E-06	2.34E-10
SVOC	Hexachlorobenzene	118-74-1	1.00E+00	1.00E+00	4.32E-06	2.34E-10
SVOC	Hexachlorobutadiene	87-68-3	1.00E+00	1.00E+00	1.10E-05	2.34E-10
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.00E+00	4.58E-01	7.41E-09	2.34E-10
SVOC	2-Methylnaphthalene	91-57-6	1.00E+00	1.00E+00	1.08E-05	2.34E-10
SVOC	Methylphenol (total)	1319-77-3	1.00E+00	1.00E+00	4.13E-06	2.34E-10
SVOC	Naphthalene	91-20-3	1.00E+00	1.00E+00	1.42E-05	2.34E-10
SVOC	Phenanthrene	85-01-8	1.00E+00	1.00E+00	9.14E-07	2.34E-10
SVOC	Phenol	108-95-2	1.00E+00	1.00E+00	5.20E-06	2.34E-10
SVOC	Pyrene	129-00-0	1.00E+00	1.00E+00	2.16E-07	2.34E-10
P/PCB	PCBs (total)	1336-36-3	1.00E+00	1.00E+00	9.66E-07	2.34E-10
INORG	Aluminum	7429-90-5	1.00E+00			2.34E-10
INORG	Antimony	7440-36-0	1.00E+00			2.34E-10
INORG	Arsenic	7440-38-2	1.00E+00			2.34E-10
INORG	Barium	7440-39-3	1.00E+00			2.34E-10
INORG	Beryllium	7440-41-7	1.00E+00			2.34E-10
INORG	Cadmium	7440-43-9	1.00E+00			2.34E-10
INORG	Chromium (total)	7440-47-3	1.00E+00			2.34E-10
INORG	Cobalt	7440-48-4	1.00E+00			2.34E-10
INORG	Copper	7440-50-8	1.00E+00			2.34E-10
INORG	Cyanide (amenable)	57-12-5A	1.00E+00			2.34E-10
INORG	Cyanide (total)	57-12-5	1.00E+00			2.34E-10
INORG	Iron	7439-89-6	1.00E+00			2.34E-10
INORG	Lead	7439-92-1	1.00E+00			2.34E-10
INORG	Manganese	7439-96-5	1.00E+00			2.34E-10

**Attachment B.6: Estimated Concentrations in Ambient Air from Soil
(Routine Worker Scenario)
GM Powertrain Bedford Facility, Bedford, Indiana**

			C_{air} Used			
					Vapor	PM₁₀
Chem Group	Chemical	CASRN	C_{soil} (mg/kg)	C_{source} (mg/kg)	C_{air} (mg/m³)	C_{air} (mg/m³)
INORG	Mercury	7439-97-6	1.00E+00	1.00E+00	4.32E-06	2.34E-10
INORG	Nickel	7440-02-0	1.00E+00			2.34E-10
INORG	Selenium	7782-49-2	1.00E+00			2.34E-10
INORG	Silver	7440-22-4	1.00E+00			2.34E-10
INORG	Thallium	7440-28-0	1.00E+00			2.34E-10
INORG	Vanadium	7440-62-2	1.00E+00			2.34E-10
INORG	Zinc	7440-66-6	1.00E+00			2.34E-10
Notes:						
C _{source} = Minimum of Soil Concentration and C _{sat}						

**Attachment B.6: Risk Based Cancer Criteria for Routine Worker Exposure to Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	1.75E-07							6.38E-05			2.34E-10			
VOC	Benzene	71-43-2	A	1.00E+00	1.75E-07	5.5E-02	1.0E+03			5.5E-02		2.98E-04	7.8E-03	1.8E+01	2.34E-10	7.8E-03	2.2E+07	1.7E+01
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	1.75E-07	6.2E-02	9.2E+02			6.2E-02		9.71E-05	1.8E-02	2.4E+01	2.34E-10	1.8E-02	9.9E+06	2.3E+01
VOC	Bromomethane	74-83-9	D	1.00E+00	1.75E-07							4.58E-04			2.34E-10			
VOC	2-Butanone	78-93-3	ID	1.00E+00	1.75E-07							5.93E-05			2.34E-10			
VOC	Carbon Disulfide	75-15-0		1.00E+00	1.75E-07							7.43E-04			2.34E-10			
VOC	Chlorobenzene	108-90-7	D	1.00E+00	1.75E-07							1.28E-04			2.34E-10			
VOC	Chloroethane	75-00-3		1.00E+00	1.75E-07	2.9E-03	2.0E+04			2.9E-03		6.11E-04			2.34E-10			2.0E+04
VOC	Chloroform	67-66-3	B2	1.00E+00	1.75E-07							3.05E-04	2.3E-02	5.8E+00	2.34E-10	2.3E-02	7.6E+06	5.8E+00
VOC	Chloromethane	74-87-3	D	1.00E+00	1.75E-07							7.28E-04			2.34E-10			
VOC	Cumene	98-82-8	D	1.00E+00	1.75E-07							5.15E-04			2.34E-10			
VOC	Cyclohexane	110-82-7	ID	1.00E+00	1.75E-07							6.28E-04			2.34E-10			
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	1.75E-07	8.4E-02	6.8E+02			8.4E-02		5.25E-05	2.4E-02	3.2E+01	2.34E-10	2.4E-02	7.3E+06	3.1E+01
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	1.75E-07							5.44E-05			2.34E-10			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	1.75E-07							3.27E-05			2.34E-10			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	1.75E-07	2.4E-02	2.4E+03			2.4E-02		6.15E-05	6.3E-03	1.1E+02	2.34E-10	6.3E-03	2.8E+07	1.0E+02
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	1.75E-07							1.03E-03			2.34E-10			
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	1.75E-07							3.40E-04			2.34E-10			
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	1.75E-07	9.1E-02	6.3E+02			9.1E-02		2.05E-04	2.6E-02	7.7E+00	2.34E-10	2.6E-02	6.7E+06	7.6E+00
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	1.75E-07							2.80E-04			2.34E-10			
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	1.75E-07							3.56E-04			2.34E-10			
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	1.75E-07							1.48E-04			2.34E-10			
VOC	2-Hexanone	591-78-6		1.00E+00	1.75E-07							3.22E-04			2.34E-10			
VOC	Methyl Acetate	79-20-9		1.00E+00	1.75E-07							1.79E-05			2.34E-10			
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	1.75E-07	3.3E-03	1.7E+04			3.3E-03		1.59E-04	1.0E-04	2.6E+03	2.34E-10	1.0E-04	1.7E+09	2.2E+03
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	1.75E-07							6.46E-05			2.34E-10			
VOC	Methylcyclohexane	108-87-2		1.00E+00	1.75E-07							7.24E-04			2.34E-10			
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	1.75E-07	7.5E-03	7.6E+03			7.5E-03		3.27E-04	4.7E-04	2.7E+02	2.34E-10	4.7E-04	3.7E+08	2.6E+02
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	1.75E-07	5.2E-02	1.1E+03			5.2E-02		3.22E-04	3.1E-03	4.2E+01	2.34E-10	3.1E-03	5.7E+07	4.0E+01
VOC	Toluene	108-88-3	D	1.00E+00	1.75E-07							2.02E-04			2.34E-10			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	1.75E-07							1.84E-05			2.34E-10			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	1.75E-07							3.74E-04			2.34E-10			
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	1.75E-07	1.1E-02	5.2E+03			1.1E-02		2.48E-04	1.7E-03	9.7E+01	2.34E-10	1.7E-03	1.0E+08	9.5E+01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	1.75E-07							5.74E-04			2.34E-10			
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	1.75E-07	1.4E+00	4.1E+01			1.4E+00		8.85E-04	8.8E-03	5.3E+00	2.34E-10	8.8E-03	2.0E+07	4.7E+00
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	1.75E-07							1.36E-04			2.34E-10			
SVOC	Acenaphthene	83-32-9		1.00E+00	1.75E-07			1.30E-01	3.00E-07			3.64E-06			2.34E-10			
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			3.83E-06			2.34E-10			
SVOC	Acetophenone	98-86-2	D	1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.50E-05			2.34E-10			
SVOC	Anthracene	120-12-7	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			1.02E-06			2.34E-10			
SVOC	Benzaldehyde	100-52-7		1.00E+00	1.75E-07			1.00E-01	2.31E-07			2.37E-05			2.34E-10			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	1.75E-07	7.3E-01	7.8E+01	1.30E-01	3.00E-07	7.3E-01	4.6E+01	8.96E-08	2.1E-01	2.2E+03	2.34E-10	2.1E-01	8.4E+05	2.8E+01
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	1.75E-07	7.3E+00	7.8E+00	1.30E-01	3.00E-07	7.3E+00	4.6E+00	3.76E-08	8.9E-01	1.2E+03	2.34E-10	8.9E-01	2.0E+05	2.9E+00
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	1.75E-07	7.3E-01	7.8E+01	1.30E-01	3.00E-07	7.3E-01	4.6E+01	1.72E-07	2.1E-01	1.1E+03	2.34E-10	2.1E-01	8.4E+05	2.8E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			1.72E-08			2.34E-10			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	1.75E-07	7.3E-02	7.8E+02	1.30E-01	3.00E-07	7.3E-02	4.6E+02	2.44E-08	2.1E-02	8.0E+04	2.34E-10	2.1E-02	8.4E+06	2.9E+02
SVOC	Biphenyl	92-52-4	D	1.00E+00	1.75E-07			1.00E-01	2.31E-07			4.07E-06			2.34E-10			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	1.75E-07	1.4E-02	4.1E+03	1.00E-01	2.31E-07	1.4E-02	3.1E+03	4.86E-09	4.0E-03	2.1E+06	2.34E-10	4.0E-03	4.4E+07	1.8E+03
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.12E-07			2.34E-10			
SVOC	Caprolactam	105-60-2		1.00E+00	1.75E-07			1.00E-01	2.31E-07			6.70E-06			2.34E-10			
SVOC	Carbazole	86-74-8	B2	1.00E+00	1.75E-07	2.0E-02	2.9E+03	1.00E-01	2.31E-07	2.0E-02	2.2E+03	4.18E-07	5.7E-03	1.7E+04	2.34E-10	5.7E-03	3.1E+07	1.2E+03

**Attachment B.6: Risk Based Cancer Criteria for Routine Worker Exposure to Soil
GM Powertrain Bedford Facility, Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	1.75E-07			1.00E-01	2.31E-07			3.60E-06			2.34E-10			
SVOC	Chrysene	218-01-9	B2	1.00E+00	1.75E-07	7.3E-03	7.8E+03	1.30E-01	3.00E-07	7.3E-03	4.6E+03	2.93E-07	2.1E-03	6.7E+04	2.34E-10	2.1E-03	8.4E+07	2.8E+03
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	1.75E-07	7.3E+00	7.8E+00	1.30E-01	3.00E-07	7.3E+00	4.6E+00	1.07E-08	2.1E+00	1.8E+03	2.34E-10	2.1E+00	8.4E+04	2.9E+00
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	1.75E-07			1.00E-01	2.31E-07			6.90E-07			2.34E-10			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.51E-06			2.34E-10			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	1.75E-07			1.00E-01	2.31E-07			3.26E-06			2.34E-10			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.39E-07			2.34E-10			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	1.75E-07	6.8E-01	8.4E+01	1.00E-01	2.31E-07	6.8E-01	6.4E+01	3.34E-06	1.9E-01	6.3E+01	2.34E-10	1.9E-01	9.0E+05	2.3E+01
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.33E-08			2.34E-10			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			2.65E-07			2.34E-10			
SVOC	Fluorene	86-73-7	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			1.56E-06			2.34E-10			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	1.75E-07	1.6E+00	3.6E+01	1.00E-01	2.31E-07	1.6E+00	2.7E+01	4.32E-06	4.6E-01	2.1E+01	2.34E-10	4.6E-01	3.8E+05	8.8E+00
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	1.75E-07	7.8E-02	7.3E+02	1.00E-01	2.31E-07	7.8E-02	5.6E+02	1.10E-05	2.2E-02	1.7E+02	2.34E-10	2.2E-02	7.9E+06	1.1E+02
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	1.75E-07	7.3E-01	7.8E+01	1.30E-01	3.00E-07	7.3E-01	4.6E+01	7.41E-09	2.1E-01	2.6E+04	2.34E-10	2.1E-01	8.4E+05	2.9E+01
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	1.75E-07			1.00E-01	2.31E-07			1.08E-05			2.34E-10			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	1.75E-07			1.00E-01	2.31E-07			4.13E-06			2.34E-10			
SVOC	Naphthalene	91-20-3	C	1.00E+00	1.75E-07			1.30E-01	3.00E-07			1.42E-05			2.34E-10			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			9.14E-07			2.34E-10			
SVOC	Phenol	108-95-2	ID	1.00E+00	1.75E-07			1.00E-01	2.31E-07			5.20E-06			2.34E-10			
SVOC	Pyrene	129-00-0	D	1.00E+00	1.75E-07			1.30E-01	3.00E-07			2.16E-07			2.34E-10			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	1.75E-07	2.0E+00	2.9E+01	1.40E-01	3.23E-07	2.0E+00	1.5E+01	9.66E-07	5.7E-01	7.4E+01	2.34E-10	5.7E-01	3.1E+05	8.8E+00
INORG	Aluminum	7429-90-5	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Antimony	7440-36-0		1.00E+00	1.75E-07										2.34E-10			
INORG	Arsenic	7440-38-2	A	1.00E+00	1.75E-07	1.5E+00	3.8E+01	3.00E-02	6.92E-08	1.5E+00	9.6E+01		4.3E+00		2.34E-10	4.3E+00	4.1E+04	2.7E+01
INORG	Barium	7440-39-3	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Beryllium	7440-41-7	B1	1.00E+00	1.75E-07								2.4E+00		2.34E-10	2.4E+00	7.3E+04	7.3E+04
INORG	Cadmium	7440-43-9	B1	1.00E+00	1.75E-07			1.00E-03	2.31E-09				1.8E+00		2.34E-10	1.8E+00	9.7E+04	9.7E+04
INORG	Chromium (total)	7440-47-3		1.00E+00	1.75E-07								1.2E+01		2.34E-10	1.2E+01	1.5E+04	1.5E+04
INORG	Cobalt	7440-48-4	B1	1.00E+00	1.75E-07								2.8E+00		2.34E-10	2.8E+00	6.2E+04	6.2E+04
INORG	Copper	7440-50-8	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Cyanide (total)	57-12-5	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Iron	7439-89-6	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Lead	7439-92-1	B2	1.00E+00	1.75E-07										2.34E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Mercury	7439-97-6	D	1.00E+00	1.75E-07							4.32E-06			2.34E-10			
INORG	Nickel	7440-02-0	A	1.00E+00	1.75E-07								2.4E-01		2.34E-10	2.4E-01	7.3E+05	7.3E+05
INORG	Selenium	7782-49-2	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Silver	7440-22-4	D	1.00E+00	1.75E-07										2.34E-10			
INORG	Thallium	7440-28-0		1.00E+00	1.75E-07										2.34E-10			
INORG	Vanadium	7440-62-2		1.00E+00	1.75E-07										2.34E-10			
INORG	Zinc	7440-66-6	D	1.00E+00	1.75E-07										2.34E-10			

Attachment B.6: Risk Based Noncancer Criteria for Routine Worker Exposure to Soil

GM Powertrain Bedford Facility, Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	4.89E-07	9.0E-01	1.84E+06			9.0E-01		6.38E-05	3.2E+00	7.20E+04	2.34E-10	3.2E+00	1.97E+10	6.93E+04
VOC	Benzene	71-43-2	A	1.00E+00	4.89E-07	4.0E-03	8.18E+03			4.0E-03		2.98E-04	3.0E-02	1.47E+02	2.34E-10	3.0E-02	1.87E+08	1.44E+02
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02		9.71E-05	7.0E-02	1.05E+03	2.34E-10	7.0E-02	4.37E+08	1.03E+03
VOC	Bromomethane	74-83-9	D	1.00E+00	4.89E-07	1.4E-03	2.86E+03			1.4E-03		4.58E-04	5.0E-03	1.59E+01	2.34E-10	5.0E-03	3.12E+07	1.58E+01
VOC	2-Butanone	78-93-3	ID	1.00E+00	4.89E-07	6.0E-01	1.23E+06			6.0E-01		5.93E-05	5.0E+00	1.23E+05	2.34E-10	5.0E+00	3.12E+10	1.12E+05
VOC	Carbon Disulfide	75-15-0		1.00E+00	4.89E-07	1.0E-01	2.04E+05			1.0E-01		7.43E-04	7.0E-01	1.38E+03	2.34E-10	7.0E-01	4.37E+09	1.37E+03
VOC	Chlorobenzene	108-90-7	D	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02		1.28E-04	6.0E-02	6.86E+02	2.34E-10	6.0E-02	3.75E+08	6.75E+02
VOC	Chloroethane	75-00-3		1.00E+00	4.89E-07	4.0E-01	8.18E+05			4.0E-01		6.11E-04	1.0E+01	2.39E+04	2.34E-10	1.0E+01	6.25E+10	2.32E+04
VOC	Chloroform	67-66-3	B2	1.00E+00	4.89E-07	1.0E-02	2.04E+04			1.0E-02		3.05E-04	5.0E-02	2.39E+02	2.34E-10	5.0E-02	3.12E+08	2.37E+02
VOC	Chloromethane	74-87-3	D	1.00E+00	4.89E-07							7.28E-04	9.0E-02	1.81E+02	2.34E-10	9.0E-02	5.62E+08	1.81E+02
VOC	Cumene	98-82-8	D	1.00E+00	4.89E-07	1.0E-01	2.04E+05			1.0E-01		5.15E-04	4.0E-01	1.13E+03	2.34E-10	4.0E-01	2.50E+09	1.13E+03
VOC	Cyclohexane	110-82-7	ID	1.00E+00	4.89E-07							6.28E-04	6.0E+00	1.39E+04	2.34E-10	6.0E+00	3.75E+10	1.39E+04
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02		5.25E-05	7.0E-02	1.95E+03	2.34E-10	7.0E-02	4.37E+08	1.86E+03
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	4.89E-07	9.0E-02	1.84E+05			9.0E-02		5.44E-05	2.0E-01	5.37E+03	2.34E-10	2.0E-01	1.25E+09	5.21E+03
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	4.89E-07	9.0E-04	1.84E+03			9.0E-04		3.27E-05	1.4E-01	6.26E+03	2.34E-10	1.4E-01	8.74E+08	1.42E+03
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	4.89E-07	3.0E-02	6.13E+04			3.0E-02		6.15E-05	8.0E-01	1.90E+04	2.34E-10	8.0E-01	5.00E+09	1.45E+04
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	4.89E-07	2.0E-01	4.09E+05			2.0E-01		1.03E-03	2.0E-01	2.82E+02	2.34E-10	2.0E-01	1.25E+09	2.82E+02
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	4.89E-07	1.0E-01	2.04E+05			1.0E-01		3.40E-04	5.0E-01	2.15E+03	2.34E-10	5.0E-01	3.12E+09	2.13E+03
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	4.89E-07	3.0E-02	6.13E+04			3.0E-02		2.05E-04	5.0E-03	3.55E+01	2.34E-10	5.0E-03	3.12E+07	3.55E+01
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	4.89E-07	1.0E-02	2.04E+04			1.0E-02		2.80E-04	3.5E-02	1.82E+02	2.34E-10	3.5E-02	2.19E+08	1.81E+02
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02		3.56E-04	7.0E-02	2.87E+02	2.34E-10	7.0E-02	4.37E+08	2.85E+02
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	4.89E-07	1.0E-01	2.04E+05			1.0E-01		1.48E-04	1.0E+00	9.84E+03	2.34E-10	1.0E+00	6.25E+09	9.39E+03
VOC	2-Hexanone	591-78-6		1.00E+00	4.89E-07	4.0E-02	8.18E+04			4.0E-02		3.22E-04	5.0E-03	2.27E+01	2.34E-10	5.0E-03	3.12E+07	2.27E+01
VOC	Methyl Acetate	79-20-9		1.00E+00	4.89E-07	1.0E+00	2.04E+06			1.0E+00		1.79E-05	3.5E+00	2.85E+05	2.34E-10	3.5E+00	2.19E+10	2.50E+05
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	4.89E-07							1.59E-04	3.0E+00	2.75E+04	2.34E-10	3.0E+00	1.87E+10	2.75E+04
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	4.89E-07							6.46E-05	3.0E+00	6.78E+04	2.34E-10	3.0E+00	1.87E+10	6.78E+04
VOC	Methylcyclohexane	108-87-2		1.00E+00	4.89E-07							7.24E-04	3.0E+00	6.05E+03	2.34E-10	3.0E+00	1.87E+10	6.05E+03
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	4.89E-07	6.0E-02	1.23E+05			6.0E-02		3.27E-04	3.0E+00	1.34E+04	2.34E-10	3.0E+00	1.87E+10	1.21E+04
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	4.89E-07	1.0E-02	2.04E+04			1.0E-02		3.22E-04	4.0E-01	1.82E+03	2.34E-10	4.0E-01	2.50E+09	1.67E+03
VOC	Toluene	108-88-3	D	1.00E+00	4.89E-07	2.0E-01	4.09E+05			2.0E-01		2.02E-04	4.0E-01	2.89E+03	2.34E-10	4.0E-01	2.50E+09	2.87E+03
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	4.89E-07	1.0E-02	2.04E+04			1.0E-02		1.84E-05	2.0E-01	1.58E+04	2.34E-10	2.0E-01	1.25E+09	8.92E+03
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	4.89E-07	2.8E-01	5.72E+05			2.8E-01		3.74E-04	2.2E+00	8.59E+03	2.34E-10	2.2E+00	1.37E+10	8.47E+03
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	4.89E-07	6.0E-03	1.23E+04			6.0E-03		2.48E-04			2.34E-10			1.23E+04
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	4.89E-07	3.0E+01	6.13E+07			3.0E+01		5.74E-04	3.0E+01	7.63E+04	2.34E-10	3.0E+01	1.87E+11	7.62E+04
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	4.89E-07	3.0E-03	6.13E+03			3.0E-03		8.85E-04	1.0E-01	1.65E+02	2.34E-10	1.0E-01	6.25E+08	1.61E+02
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	4.89E-07	2.0E-01	4.09E+05			2.0E-01		1.36E-04	1.0E-01	1.07E+03	2.34E-10	1.0E-01	6.25E+08	1.07E+03
SVOC	Acenaphthene	83-32-9		1.00E+00	4.89E-07	6.0E-02	1.23E+05	1.30E-01	8.40E-07	6.0E-02	7.15E+04	3.64E-06	2.1E-01	8.41E+04	2.34E-10	2.1E-01	1.31E+09	2.94E+04
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	4.89E-07	3.0E-02	6.13E+04	1.30E-01	8.40E-07	3.0E-02	3.57E+04	3.83E-06	1.1E-01	4.01E+04	2.34E-10	1.1E-01	6.56E+08	1.44E+04
SVOC	Acetophenone	98-86-2	D	1.00E+00	4.89E-07	1.0E-01	2.04E+05	1.00E-01	6.46E-07	1.0E-01	1.55E+05	1.50E-05	3.5E-01	3.41E+04	2.34E-10	3.5E-01	2.19E+09	2.46E+04
SVOC	Anthracene	120-12-7	D	1.00E+00	4.89E-07	3.0E-01	6.13E+05	1.30E-01	8.40E-07	3.0E-01	3.57E+05	1.02E-06			2.34E-10			2.26E+05
SVOC	Benzaldehyde	100-52-7		1.00E+00	4.89E-07	1.0E-01	2.04E+05	1.00E-01	6.46E-07	1.0E-01	1.55E+05	2.37E-05	3.5E-01	2.16E+04	2.34E-10	3.5E-01	2.19E+09	1.73E+04
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			8.96E-08			2.34E-10			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			3.76E-08			2.34E-10			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			1.72E-07			2.34E-10			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	4.89E-07	3.0E-02	6.13E+04	1.30E-01	8.40E-07	3.0E-02	3.57E+04	1.72E-08	1.1E-01	8.91E+06	2.34E-10	1.1E-01	6.56E+08	2.25E+04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			2.44E-08			2.34E-10			
SVOC	Biphenyl	92-52-4	D	1.00E+00	4.89E-07	5.0E-02	1.02E+05	1.00E-01	6.46E-07	5.0E-02	7.74E+04	4.07E-06	1.8E-01	6.28E+04	2.34E-10	1.8E-01	1.09E+09	2.59E+04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	4.89E-07	2.0E-02	4.09E+04	1.00E-01	6.46E-07	2.0E-02	3.10E+04	4.86E-09			2.34E-10			1.76E+04
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	4.89E-07	2.0E-01	4.09E+05	1.00E-01	6.46E-07	2.0E-01	3.10E+05	1.12E-07	7.0E-01	9.16E+06	2.34E-10	7.0E-01	4.37E+09	1.73E+05
SVOC	Caprolactam	105-60-2		1.00E+00	4.89E-07	5.0E-01	1.02E+06	1.00E-01	6.46E-07	5.0E-01	7.74E+05	6.70E-06	1.8E+00	3.81E+05	2.34E-10	1.8E+00	1.09E+10	2.04E+05

Attachment B.6: Risk Based Noncancer Criteria for Routine Worker Exposure to Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
SVOC	Carbazole	86-74-8	B2	1.00E+00	4.89E-07			1.00E-01	6.46E-07			4.18E-07			2.34E-10			
SVOC	4-Chloroaniline	106-47-8		1.00E+00	4.89E-07	4.0E-03	8.18E+03	1.00E-01	6.46E-07	4.0E-03	6.19E+03	3.60E-06	1.4E-02	5.68E+03	2.34E-10	1.4E-02	8.74E+07	2.17E+03
SVOC	Chrysene	218-01-9	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			2.93E-07			2.34E-10			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			1.07E-08			2.34E-10			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	4.89E-07	4.0E-03	8.18E+03	1.00E-01	6.46E-07	4.0E-03	6.19E+03	6.90E-07	1.4E-02	2.96E+04	2.34E-10	1.4E-02	8.74E+07	3.15E+03
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	4.89E-07	8.0E-01	1.64E+06	1.00E-01	6.46E-07	8.0E-01	1.24E+06	1.51E-06	2.8E+00	2.71E+06	2.34E-10	2.8E+00	1.75E+10	5.59E+05
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	4.89E-07	2.0E-02	4.09E+04	1.00E-01	6.46E-07	2.0E-02	3.10E+04	3.26E-06	7.0E-02	3.13E+04	2.34E-10	7.0E-02	4.37E+08	1.13E+04
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	4.89E-07	1.0E-01	2.04E+05	1.00E-01	6.46E-07	1.0E-01	1.55E+05	1.39E-07			2.34E-10			8.81E+04
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	4.89E-07	1.0E-03	2.04E+03	1.00E-01	6.46E-07	1.0E-03	1.55E+03	3.34E-06	3.5E-03	1.53E+03	2.34E-10	3.5E-03	2.19E+07	5.59E+02
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	4.89E-07	4.0E-02	8.18E+04	1.00E-01	6.46E-07	4.0E-02	6.19E+04	1.33E-08			2.34E-10			3.52E+04
SVOC	Fluoranthene	206-44-0	D	1.00E+00	4.89E-07	4.0E-02	8.18E+04	1.30E-01	8.40E-07	4.0E-02	4.76E+04	2.65E-07	1.4E-01	7.72E+05	2.34E-10	1.4E-01	8.74E+08	2.90E+04
SVOC	Fluorene	86-73-7	D	1.00E+00	4.89E-07	4.0E-02	8.18E+04	1.30E-01	8.40E-07	4.0E-02	4.76E+04	1.56E-06	1.4E-01	1.31E+05	2.34E-10	1.4E-01	8.74E+08	2.45E+04
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	4.89E-07	8.0E-04	1.64E+03	1.00E-01	6.46E-07	8.0E-04	1.24E+03	4.32E-06			2.34E-10			7.05E+02
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	4.89E-07	3.0E-04	6.13E+02	1.00E-01	6.46E-07	3.0E-04	4.65E+02	1.10E-05			2.34E-10			2.64E+02
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	4.89E-07			1.30E-01	8.40E-07			7.41E-09			2.34E-10			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	4.89E-07	4.0E-03	8.18E+03	1.00E-01	6.46E-07	4.0E-03	6.19E+03	1.08E-05	3.0E-03	4.05E+02	2.34E-10	3.0E-03	1.87E+07	3.63E+02
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	4.89E-07	5.0E-02	1.02E+05	1.00E-01	6.46E-07	5.0E-02	7.74E+04	4.13E-06	1.8E-01	6.19E+04	2.34E-10	1.8E-01	1.09E+09	2.57E+04
SVOC	Naphthalene	91-20-3	C	1.00E+00	4.89E-07	2.0E-02	4.09E+04	1.30E-01	8.40E-07	2.0E-02	2.38E+04	1.42E-05	3.0E-03	3.08E+02	2.34E-10	3.0E-03	1.87E+07	3.01E+02
SVOC	Phenanthrene	85-01-8	D	1.00E+00	4.89E-07	3.0E-02	6.13E+04	1.30E-01	8.40E-07	3.0E-02	3.57E+04	9.14E-07	1.1E-01	1.68E+05	2.34E-10	1.1E-01	6.56E+08	1.99E+04
SVOC	Phenol	108-95-2	ID	1.00E+00	4.89E-07	3.0E-01	6.13E+05	1.00E-01	6.46E-07	3.0E-01	4.65E+05	5.20E-06			2.34E-10			2.64E+05
SVOC	Pyrene	129-00-0	D	1.00E+00	4.89E-07	3.0E-02	6.13E+04	1.30E-01	8.40E-07	3.0E-02	3.57E+04	2.16E-07	1.1E-01	7.10E+05	2.34E-10	1.1E-01	6.56E+08	2.19E+04
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	4.89E-07	2.0E-05	4.09E+01	1.40E-01	9.04E-07	2.0E-05	2.21E+01	9.66E-07			2.34E-10			1.44E+01
INORG	Aluminum	7429-90-5	D	1.00E+00	4.89E-07	1.0E+00	2.04E+06			1.0E+00			5.0E-03		2.34E-10	5.0E-03	3.12E+07	1.92E+06
INORG	Antimony	7440-36-0		1.00E+00	4.89E-07	4.0E-04	8.18E+02			6.0E-05			1.4E-03		2.34E-10	1.4E-03	8.74E+06	8.18E+02
INORG	Arsenic	7440-38-2	A	1.00E+00	4.89E-07	3.0E-04	6.13E+02	3.00E-02	1.94E-07	3.0E-04	1.55E+03				2.34E-10			4.39E+02
INORG	Barium	7440-39-3	D	1.00E+00	4.89E-07	7.0E-02	1.43E+05			7.0E-02					2.34E-10			1.43E+05
INORG	Beryllium	7440-41-7	B1	1.00E+00	4.89E-07	2.0E-03	4.09E+03			1.4E-05			2.0E-05		2.34E-10	2.0E-05	1.25E+05	3.96E+03
INORG	Cadmium	7440-43-9	B1	1.00E+00	4.89E-07	1.0E-03	2.04E+03	1.00E-03	6.46E-09	2.5E-05	3.87E+03		2.0E-04		2.34E-10	2.0E-04	1.25E+06	1.34E+03
INORG	Chromium (total)	7440-47-3		1.00E+00	4.89E-07	3.0E-03	6.13E+03			7.5E-05					2.34E-10			6.13E+03
INORG	Cobalt	7440-48-4	B1	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02			2.0E-05		2.34E-10	2.0E-05	1.25E+05	3.08E+04
INORG	Copper	7440-50-8	D	1.00E+00	4.89E-07	4.0E-02	8.18E+04			4.0E-02			1.4E-01		2.34E-10	1.4E-01	8.74E+08	8.18E+04
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02			7.0E-02		2.34E-10	7.0E-02	4.37E+08	4.09E+04
INORG	Cyanide (total)	57-12-5	D	1.00E+00	4.89E-07	2.0E-02	4.09E+04			2.0E-02			7.0E-02		2.34E-10	7.0E-02	4.37E+08	4.09E+04
INORG	Iron	7439-89-6	D	1.00E+00	4.89E-07	3.0E-01	6.13E+05			3.0E-01					2.34E-10			6.13E+05
INORG	Lead	7439-92-1	B2	1.00E+00	4.89E-07										2.34E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	4.89E-07	1.4E-01	2.86E+05			5.6E-03			5.0E-05		2.34E-10	5.0E-05	3.12E+05	1.49E+05
INORG	Mercury	7439-97-6	D	1.00E+00	4.89E-07	3.0E-04	6.13E+02			2.1E-05		4.32E-06	3.0E-04	1.01E+02	2.34E-10	3.0E-04	1.87E+06	8.69E+01
INORG	Nickel	7440-02-0	A	1.00E+00	4.89E-07	2.0E-02	4.09E+04			8.0E-04					2.34E-10			4.09E+04
INORG	Selenium	7782-49-2	D	1.00E+00	4.89E-07	5.0E-03	1.02E+04			5.0E-03			1.8E-02		2.34E-10	1.8E-02	1.09E+08	1.02E+04
INORG	Silver	7440-22-4	D	1.00E+00	4.89E-07	5.0E-03	1.02E+04			2.0E-04			1.0E-05		2.34E-10	1.0E-05	6.25E+04	8.78E+03
INORG	Thallium	7440-28-0		1.00E+00	4.89E-07	7.0E-05	1.43E+02			7.0E-05			2.5E-04		2.34E-10	2.5E-04	1.53E+06	1.43E+02
INORG	Vanadium	7440-62-2		1.00E+00	4.89E-07	7.0E-03	1.43E+04			1.8E-04			2.5E-02		2.34E-10	2.5E-02	1.53E+08	1.43E+04
INORG	Zinc	7440-66-6	D	1.00E+00	4.89E-07	3.0E-01	6.13E+05			3.0E-01			1.1E+00		2.34E-10	1.1E+00	6.56E+09	6.13E+05

A T T A C H M E N T B . 7

Exposure of Construction Workers to On-Site Soil

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A004	VOC	Acetone	67-64-1	ID	16	6	1.70E-01			2.7E+06		6.4E-08
A004	VOC	Benzene	71-43-2	A	16	1	6.00E-04		1.7E+03	5.8E+03	3.4E-12	1.0E-07
A004	VOC	2-Butanone	78-93-3	ID	16	7	3.60E-02			3.9E+06		9.3E-09
A004	VOC	Carbon Disulfide	75-15-0		16	6	8.20E-03			5.6E+04		1.5E-07
A004	VOC	Chlorobenzene	108-90-7	D	16	1	9.30E-04			2.7E+04		3.4E-08
A004	VOC	Cumene	98-82-8	D	16	2	3.40E-03			4.7E+04		7.3E-08
A004	VOC	Cyclohexane	110-82-7	ID	16	2	2.00E-03			5.8E+05		3.4E-09
A004	VOC	1,3-Dichlorobenzene	541-73-1	D	16	2	1.20E-03			2.1E+04		5.7E-08
A004	VOC	1,4-Dichlorobenzene	106-46-7	C	16	4	1.40E-03		9.6E+03	3.9E+05	1.5E-12	3.6E-09
A004	VOC	cis-1,2-Dichloroethene	156-59-2	D	16	2	1.33E-03			7.4E+03		1.8E-07
A004	VOC	Ethyl Benzene	100-41-4	D	16	2	8.80E-04			3.5E+05		2.5E-09
A004	VOC	Methyl Acetate	79-20-9		16	2	5.60E-03			8.1E+06		6.9E-10
A004	VOC	Methylcyclohexane	108-87-2		16	2	3.80E-03			2.5E+05		1.5E-08
A004	VOC	Methylene Chloride	75-09-2	B2	16	1	4.40E-03		2.5E+04	4.1E+05	1.8E-12	1.1E-08
A004	VOC	Tetrachloroethene	127-18-4	C-B2	16	2	5.35E-03		3.9E+03	5.9E+04	1.4E-11	9.1E-08
A004	VOC	Toluene	108-88-3	D	16	2	3.20E-03			1.2E+05		2.7E-08
A004	VOC	Trichloroethene	79-01-6	C-B2	16	1	1.43E-03		9.6E+03	1.5E+05	1.5E-12	9.3E-09
A004	VOC	Xylenes (total)	1330-20-7	ID	16	1	3.10E-03			4.5E+04		7.0E-08
A004	SVOC	Acenaphthene	83-32-9		16	4	5.20E-01			8.2E+05		6.4E-07
A004	SVOC	Anthracene	120-12-7	D	16	4	2.10E-01			5.4E+06		3.9E-08
A004	SVOC	Benzo(a)anthracene	56-55-3	B2	16	8	3.95E-01		1.7E+03		2.3E-09	
A004	SVOC	Benzo(a)pyrene	50-32-8	B2	16	8	5.00E-01		1.7E+02		2.9E-08	
A004	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	9	1.00E+00		1.7E+03		6.0E-09	
A004	SVOC	Benzo(g,h,i)perylene	191-24-2	D	16	8	3.90E-01			5.3E+05		7.4E-07
A004	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	7	2.20E-01		1.7E+04		1.3E-10	
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	9	5.70E-01		9.5E+04	3.8E+05	6.0E-11	1.5E-06
A004	SVOC	Carbazole	86-74-8	B2	16	4	4.30E-01		6.4E+04		6.7E-11	
A004	SVOC	Chrysene	218-01-9	B2	16	9	5.20E-01		1.7E+05		3.1E-11	
A004	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	16	2	6.90E-02		1.7E+02		4.1E-09	
A004	SVOC	Dibenzofuran	132-64-9	D	16	3	2.28E-01			7.2E+04		3.2E-06
A004	SVOC	2,4-Dimethylphenol	105-67-9		16	3	6.10E+00			2.9E+05		2.1E-05
A004	SVOC	Di-n-butylphthalate	84-74-2	D	16	7	4.30E+00			1.9E+06		2.2E-06
A004	SVOC	Di-n-octylphthalate	117-84-0		16	1	2.00E-01			7.7E+05		2.6E-07
A004	SVOC	Fluoranthene	206-44-0	D	16	11	1.17E+00			6.9E+05		1.7E-06
A004	SVOC	Fluorene	86-73-7	D	16	5	3.30E-01			6.3E+05		5.3E-07
A004	SVOC	Hexachlorobenzene	118-74-1	B2	16	1	6.90E-02		6.0E+02	1.5E+04	1.2E-09	4.5E-06
A004	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	16	7	3.50E-01		1.7E+03		2.1E-09	
A004	SVOC	2-Methylnaphthalene	91-57-6	ID	16	11	2.80E+00			1.4E+04		2.0E-04
A004	SVOC	Methylphenol (total)	1319-77-3		16	3	2.95E-01			7.0E+05		4.2E-07
A004	SVOC	Naphthalene	91-20-3	C	16	5	9.50E-01			1.2E+04		7.7E-05
A004	SVOC	Phenanthrene	85-01-8	D	16	10	1.04E+00			4.9E+05		2.1E-06
A004	SVOC	Phenol	108-95-2	ID	16	8	6.50E+00			5.8E+06		1.1E-06
A004	SVOC	Pyrene	129-00-0	D	16	11	8.80E-01			5.2E+05		1.7E-06
A004	P/PCB	PCBs (total)	1336-36-3	B2	19	19	4.13E+02		5.6E+02	3.5E+02	7.3E-06	1.2E+00
A004	INORG	Aluminum	7429-90-5	D	16	16	3.18E+04	1.48E+04		2.2E+06		7.6E-03
A004	INORG	Antimony	7440-36-0		12	2	8.40E-01	4.40E-01		1.0E+04		4.0E-05
A004	INORG	Arsenic	7440-38-2	A	16	16	1.51E+01	1.13E+01	9.5E+02	7.0E+03	4.0E-08	5.5E-04
A004	INORG	Barium	7440-39-3	D	16	16	3.79E+02	8.38E+01		1.8E+06		1.7E-04
A004	INORG	Beryllium	7440-41-7	B1	16	9	1.90E+00	5.70E-01	1.4E+04	8.2E+03	9.4E-10	1.6E-04
A004	INORG	Cadmium	7440-43-9	B1	16	13	1.30E+00	5.52E-01	1.9E+04	1.8E+04	4.0E-10	4.1E-05
A004	INORG	Chromium (total)	7440-47-3		16	16	4.41E+02	2.82E+01	2.8E+03	7.7E+04	1.5E-06	5.4E-03
A004	INORG	Cobalt	7440-48-4	B1	16	16	7.18E+02	1.00E+01	1.2E+04	9.6E+03	5.8E-07	7.4E-02
A004	INORG	Copper	7440-50-8	D	16	16	1.77E+03	1.89E+01		1.0E+06		1.7E-03
A004	INORG	Cyanide (amenable)	57-12-5A		16	1	3.30E-01			5.0E+05		6.6E-07
A004	INORG	Cyanide (total)	57-12-5	D	16	2	2.70E-01			5.0E+05		5.4E-07
A004	INORG	Iron	7439-89-6	D	16	16	7.37E+04	2.44E+04		7.7E+06		6.4E-03
A004	INORG	Manganese	7439-96-5	D	16	16	6.91E+02	6.76E+02		2.4E+04		6.0E-04
A004	INORG	Mercury	7439-97-6	D	16	15	1.06E+02	7.05E-02		2.7E+03		3.9E-02
A004	INORG	Nickel	7440-02-0	A	16	16	9.84E+02	1.83E+01	1.4E+05	5.1E+05	6.8E-08	1.9E-03
A004	INORG	Selenium	7782-49-2	D	16	3	8.10E-01	3.96E-01		1.3E+05		3.3E-06
A004	INORG	Silver	7440-22-4	D	16	7	2.90E+00			4.7E+03		6.2E-04
A004	INORG	Thallium	7440-28-0		16	10	2.60E+00	8.40E-01		1.8E+03		1.0E-03
A004	INORG	Vanadium	7440-62-2		16	16	5.33E+01	4.18E+01		1.8E+05		6.5E-05
A004	INORG	Zinc	7440-66-6	D	16	16	8.29E+02	5.48E+01		7.6E+06		1.0E-04
A004a_south	P/PCB	PCBs (total)	1336-36-3	B2	45	44	2.63E+02		5.6E+02	3.5E+02	4.7E-06	7.5E-01
A004a_west	VOC	Acetone	67-64-1	ID	5	2	1.50E-02			2.7E+06		5.6E-09
A004a_west	VOC	Chlorobenzene	108-90-7	D	5	2	4.50E-04			2.7E+04		1.7E-08
A004a_west	VOC	Methyl Acetate	79-20-9		5	1	3.50E-03			8.1E+06		4.3E-10
A004a_west	VOC	Methylene Chloride	75-09-2	B2	5	1	4.00E-03		2.5E+04	4.1E+05	1.6E-12	9.7E-09
A004a_west	SVOC	Benzaldehyde	100-52-7		5	1	1.10E-01			6.1E+05		1.8E-07
A004a_west	SVOC	Benzo(a)pyrene	50-32-8	B2	5	1	3.95E-02		1.7E+02		2.3E-09	
A004a_west	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	1	3.85E-02		1.7E+03		2.3E-10	
A004a_west	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01		9.5E+04	3.8E+05	1.3E-11	3.1E-07
A004a_west	SVOC	Di-n-butylphthalate	84-74-2	D	5	1	5.30E-01			1.9E+06		2.8E-07
A004a_west	SVOC	Fluoranthene	206-44-0	D	5	2	3.70E-02			6.9E+05		5.3E-08
A004a_west	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	1	4.65E-02		1.7E+03		2.7E-10	
A004a_west	SVOC	Phenanthrene	85-01-8	D	5	1	3.45E-02			4.9E+05		7.0E-08

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A004a_west	SVOC	Phenol	108-95-2	ID	5	1	2.20E-01			5.8E+06		3.8E-08
A004a_west	SVOC	Pyrene	129-00-0	D	5	2	3.35E-02			5.2E+05		6.4E-08
A004a_west	P/PCB	PCBs (total)	1336-36-3	B2	88	84	4.13E+02		5.6E+02	3.5E+02	7.3E-06	1.2E+00
A004a_west	INORG	Aluminum	7429-90-5	D	5	5	3.18E+04	1.48E+04		2.2E+06		7.6E-03
A004a_west	INORG	Antimony	7440-36-0		5	1	3.90E-01	4.40E-01		1.0E+04		
A004a_west	INORG	Arsenic	7440-38-2	A	5	5	1.01E+01	1.13E+01	9.5E+02	7.0E+03		
A004a_west	INORG	Barium	7440-39-3	D	5	5	1.18E+02	8.38E+01		1.8E+06		1.9E-05
A004a_west	INORG	Beryllium	7440-41-7	B1	5	3	8.80E-01	5.70E-01	1.4E+04	8.2E+03	2.2E-10	3.8E-05
A004a_west	INORG	Cadmium	7440-43-9	B1	5	3	1.30E-01	5.52E-01	1.9E+04	1.8E+04		
A004a_west	INORG	Chromium (total)	7440-47-3		5	5	3.91E+01	2.82E+01	2.8E+03	7.7E+04	3.9E-08	1.4E-04
A004a_west	INORG	Cobalt	7440-48-4	B1	5	5	3.19E+01	1.00E+01	1.2E+04	9.6E+03	1.8E-08	2.3E-03
A004a_west	INORG	Copper	7440-50-8	D	5	5	3.13E+02	1.89E+01		1.0E+06		2.9E-04
A004a_west	INORG	Cyanide (total)	57-12-5	D	5	1	1.80E-01			5.0E+05		3.6E-07
A004a_west	INORG	Iron	7439-89-6	D	5	5	2.09E+04	2.44E+04		7.7E+06		
A004a_west	INORG	Manganese	7439-96-5	D	5	5	1.28E+03	6.76E+02		2.4E+04		2.5E-02
A004a_west	INORG	Mercury	7439-97-6	D	5	4	1.50E-01	7.05E-02		2.7E+03		3.0E-05
A004a_west	INORG	Nickel	7440-02-0	A	5	5	8.68E+01	1.83E+01	1.4E+05	5.1E+05	4.8E-09	1.3E-04
A004a_west	INORG	Selenium	7782-49-2	D	5	3	7.60E-01	3.96E-01		1.3E+05		2.9E-06
A004a_west	INORG	Thallium	7440-28-0		5	3	1.30E+00	8.40E-01		1.8E+03		2.6E-04
A004a_west	INORG	Vanadium	7440-62-2		5	5	3.46E+01	4.18E+01		1.8E+05		
A004a_west	INORG	Zinc	7440-66-6	D	5	5	1.48E+02	5.48E+01		7.6E+06		1.2E-05
A005	VOC	Acetone	67-64-1	ID	16	4	1.90E-01			2.7E+06		7.1E-08
A005	VOC	Benzene	71-43-2	A	16	1	1.15E-02		1.7E+03	5.8E+03	6.6E-11	2.0E-06
A005	VOC	2-Butanone	78-93-3	ID	16	6	5.50E-02			3.9E+06		1.4E-08
A005	VOC	Carbon Disulfide	75-15-0		16	3	2.35E-02			5.6E+04		4.2E-07
A005	VOC	Chlorobenzene	108-90-7	D	16	3	1.10E-01			2.7E+04		4.0E-06
A005	VOC	Cumene	98-82-8	D	16	3	9.00E-02			4.7E+04		1.9E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	16	3	2.70E-01			2.0E+05		1.3E-06
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	16	3	2.90E+00			2.1E+04		1.4E-04
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	16	5	6.20E+00		9.6E+03	3.9E+05	6.4E-09	1.6E-05
A005	VOC	Dichlorodifluoromethane	75-71-8		16	1	5.80E-02			1.2E+04		4.9E-06
A005	VOC	1,2-Dichloroethane	107-06-2	B2	16	1	1.30E-02		7.7E+02	1.5E+03	1.7E-10	8.7E-06
A005	VOC	Ethyl Benzene	100-41-4	D	16	2	4.30E-02			3.5E+05		1.2E-07
A005	VOC	Methyl Acetate	79-20-9		16	4	2.00E-01			8.1E+06		2.5E-08
A005	VOC	Methylcyclohexane	108-87-2		16	3	2.90E-02			2.5E+05		1.1E-07
A005	VOC	Methylene Chloride	75-09-2	B2	16	3	4.85E-02		2.5E+04	4.1E+05	1.9E-11	1.2E-07
A005	VOC	Tetrachloroethene	127-18-4	C-B2	16	2	1.20E-02		3.9E+03	5.9E+04	3.1E-11	2.0E-07
A005	VOC	Toluene	108-88-3	D	16	2	6.10E-02			1.2E+05		5.2E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	16	3	3.00E-01			1.8E+05		1.6E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	16	2	1.90E-01			4.5E+04		4.3E-06
A005	SVOC	Benzaldehyde	100-52-7		16	1	1.10E+00			6.1E+05		1.8E-06
A005	SVOC	Benzo(a)anthracene	56-55-3	B2	16	4	7.90E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(a)pyrene	50-32-8	B2	16	1	7.40E-01		1.7E+02		4.3E-08	
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	4	7.80E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	1	4.30E-01		1.7E+04		2.5E-10	
A005	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	3	2.00E+00		9.5E+04	3.8E+05	2.1E-10	5.2E-06
A005	SVOC	Caprolactam	105-60-2		16	1	1.15E+00			6.0E+06		1.9E-07
A005	SVOC	Chrysene	218-01-9	B2	16	5	1.00E+00		1.7E+05		6.0E-11	
A005	SVOC	2,4-Dimethylphenol	105-67-9		16	3	1.50E+02			2.9E+05		5.1E-04
A005	SVOC	Di-n-octylphthalate	117-84-0		16	4	4.70E+00			7.7E+05		6.1E-06
A005	SVOC	Fluoranthene	206-44-0	D	16	4	1.20E+00			6.9E+05		1.7E-06
A005	SVOC	2-Methylnaphthalene	91-57-6	ID	16	3	6.40E-01			1.4E+04		4.6E-05
A005	SVOC	Methylphenol (total)	1319-77-3		16	2	3.05E-01			7.0E+05		4.4E-07
A005	SVOC	Naphthalene	91-20-3	C	16	2	7.60E-01			1.2E+04		6.2E-05
A005	SVOC	Phenanthrene	85-01-8	D	16	3	3.35E-01			4.9E+05		6.8E-07
A005	SVOC	Phenol	108-95-2	ID	16	4	7.50E+00			5.8E+06		1.3E-06
A005	SVOC	Pyrene	129-00-0	D	16	6	1.20E+00			5.2E+05		2.3E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	25	24	9.68E+03		5.6E+02	3.5E+02	1.7E-04	2.8E+01
A005	INORG	Aluminum	7429-90-5	D	16	16	1.77E+04	1.48E+04		2.2E+06		1.3E-03
A005	INORG	Antimony	7440-36-0		16	7	2.80E+00	4.40E-01		1.0E+04		2.3E-04
A005	INORG	Arsenic	7440-38-2	A	16	16	9.60E+00	1.13E+01	9.5E+02	7.0E+03		
A005	INORG	Barium	7440-39-3	D	16	16	1.30E+02	8.38E+01		1.8E+06		2.6E-05
A005	INORG	Beryllium	7440-41-7	B1	16	8	1.10E+00	5.70E-01	1.4E+04	8.2E+03	3.7E-10	6.5E-05
A005	INORG	Cadmium	7440-43-9	B1	16	11	9.10E-01	5.52E-01	1.9E+04	1.8E+04	1.9E-10	2.0E-05
A005	INORG	Chromium (total)	7440-47-3		16	16	1.60E+02	2.82E+01	2.8E+03	7.7E+04	4.6E-07	1.7E-03
A005	INORG	Cobalt	7440-48-4	B1	16	16	3.73E+01	1.00E+01	1.2E+04	9.6E+03	2.2E-08	2.9E-03
A005	INORG	Copper	7440-50-8	D	16	16	4.06E+02	1.89E+01		1.0E+06		3.8E-04
A005	INORG	Cyanide (total)	57-12-5	D	16	1	2.50E-01			5.0E+05		5.0E-07
A005	INORG	Iron	7439-89-6	D	16	16	4.86E+04	2.44E+04		7.7E+06		3.2E-03
A005	INORG	Manganese	7439-96-5	D	16	16	1.64E+03	6.76E+02		2.4E+04		4.0E-02
A005	INORG	Mercury	7439-97-6	D	16	15	7.90E-01	7.05E-02		2.7E+03		2.7E-04
A005	INORG	Nickel	7440-02-0	A	16	16	3.60E+02	1.83E+01	1.4E+05	5.1E+05	2.4E-08	6.7E-04
A005	INORG	Selenium	7782-49-2	D	16	4	8.10E-01	3.96E-01		1.3E+05		3.3E-06
A005	INORG	Silver	7440-22-4	D	16	4	1.80E+00			4.7E+03		3.8E-04
A005	INORG	Thallium	7440-28-0		16	3	6.60E-01	8.40E-01		1.8E+03		
A005	INORG	Vanadium	7440-62-2		16	16	7.75E+01	4.18E+01		1.8E+05		2.0E-04
A005	INORG	Zinc	7440-66-6	D	16	16	1.34E+02	5.48E+01		7.6E+06		1.0E-05

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A006	VOC	Acetone	67-64-1	ID	20	1	3.95E-01			2.7E+06		1.5E-07
A006	VOC	Bromomethane	74-83-9	D	20	1	5.00E-01			6.6E+02		7.6E-04
A006	VOC	2-Butanone	78-93-3	ID	20	4	4.00E-01			3.9E+06		1.0E-07
A006	VOC	Chlorobenzene	108-90-7	D	20	4	4.00E+00			2.7E+04		1.5E-04
A006	VOC	Cumene	98-82-8	D	20	2	3.90E-02			4.7E+04		8.4E-07
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	20	5	2.60E+00			2.0E+05		1.3E-05
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	20	6	3.20E+01			2.1E+04		1.5E-03
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	20	6	8.40E+01		9.6E+03	3.9E+05	8.7E-08	2.2E-04
A006	VOC	1,2-Dichloroethane	107-06-2	B2	20	1	5.50E-02		7.7E+02	1.5E+03	7.1E-10	3.7E-05
A006	VOC	Ethyl Benzene	100-41-4	D	20	1	7.00E-02			3.5E+05		2.0E-07
A006	VOC	Methyl Acetate	79-20-9		20	5	2.20E-01			8.1E+06		2.7E-08
A006	VOC	Methylene Chloride	75-09-2	B2	20	4	3.95E-01		2.5E+04	4.1E+05	1.6E-10	9.6E-07
A006	VOC	Toluene	108-88-3	D	20	2	7.30E-01			1.2E+05		6.2E-06
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	20	4	7.80E-01			1.8E+05		4.2E-06
A006	VOC	Xylenes (total)	1330-20-7	ID	20	2	3.00E-01			4.5E+04		6.7E-06
A006	SVOC	Acenaphthene	83-32-9		20	2	1.65E+00			8.2E+05		2.0E-06
A006	SVOC	Acenaphthylene	208-96-8	D	20	1	1.55E+00			4.0E+05		3.8E-06
A006	SVOC	Anthracene	120-12-7	D	20	1	1.60E+00			5.4E+06		3.0E-07
A006	SVOC	Benzaldehyde	100-52-7		20	2	5.50E+00			6.1E+05		9.0E-06
A006	SVOC	Benzo(a)anthracene	56-55-3	B2	20	1	1.80E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(a)pyrene	50-32-8	B2	20	1	1.95E+00		1.7E+02		1.1E-07	
A006	SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	1	1.90E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	1	1.80E+00			5.3E+05		3.4E-06
A006	SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	1	1.70E+00		1.7E+04		1.0E-09	
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	5	4.20E+01		9.5E+04	3.8E+05	4.4E-09	1.1E-04
A006	SVOC	Carbazole	86-74-8	B2	20	1	1.70E+00		6.4E+04		2.7E-10	
A006	SVOC	Chrysene	218-01-9	B2	20	1	1.50E+00		1.7E+05		9.1E-11	
A006	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	1	1.65E+00		1.7E+02		9.7E-08	
A006	SVOC	Dibenzofuran	132-64-9	D	20	1	1.65E+00			7.2E+04		2.3E-05
A006	SVOC	2,4-Dimethylphenol	105-67-9		20	2	1.30E+01			2.9E+05		4.4E-05
A006	SVOC	Di-n-octylphthalate	117-84-0		20	7	6.30E+01			7.7E+05		8.2E-05
A006	SVOC	Fluoranthene	206-44-0	D	20	2	1.80E+00			6.9E+05		2.6E-06
A006	SVOC	Fluorene	86-73-7	D	20	1	1.55E+00			6.3E+05		2.5E-06
A006	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	1	2.30E+00		1.7E+03		1.4E-08	
A006	SVOC	2-Methylnaphthalene	91-57-6	ID	20	1	1.55E+00			1.4E+04		1.1E-04
A006	SVOC	Naphthalene	91-20-3	C	20	1	1.60E+00			1.2E+04		1.3E-04
A006	SVOC	Phenanthrene	85-01-8	D	20	1	1.70E+00			4.9E+05		3.4E-06
A006	SVOC	Pyrene	129-00-0	D	20	1	1.65E+00			5.2E+05		3.2E-06
A006	P/PCB	PCBs (total)	1336-36-3	B2	23	21	1.94E+04		5.6E+02	3.5E+02	3.5E-04	5.5E+01
A006	INORG	Aluminum	7429-90-5	D	20	20	2.00E+04	1.48E+04		2.2E+06		2.3E-03
A006	INORG	Antimony	7440-36-0		17	2	9.40E-01	4.40E-01		1.0E+04		5.0E-05
A006	INORG	Arsenic	7440-38-2	A	20	20	3.70E+01	1.13E+01	9.5E+02	7.0E+03	2.7E-07	3.7E-03
A006	INORG	Barium	7440-39-3	D	20	20	3.74E+02	8.38E+01		1.8E+06		1.6E-04
A006	INORG	Beryllium	7440-41-7	B1	20	16	7.80E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-09	8.8E-04
A006	INORG	Cadmium	7440-43-9	B1	20	15	5.10E+00	5.52E-01	1.9E+04	1.8E+04	2.4E-09	2.5E-04
A006	INORG	Chromium (total)	7440-47-3		20	20	4.91E+01	2.82E+01	2.8E+03	7.7E+04	7.4E-08	2.7E-04
A006	INORG	Cobalt	7440-48-4	B1	20	20	3.07E+02	1.00E+01	1.2E+04	9.6E+03	2.4E-07	3.1E-02
A006	INORG	Copper	7440-50-8	D	20	20	6.33E+02	1.89E+01		1.0E+06		6.1E-04
A006	INORG	Cyanide (total)	57-12-5	D	20	1	3.80E-01			5.0E+05		7.5E-07
A006	INORG	Iron	7439-89-6	D	20	20	3.98E+04	2.44E+04		7.7E+06		2.0E-03
A006	INORG	Manganese	7439-96-5	D	20	20	1.88E+03	6.76E+02		2.4E+04		5.0E-02
A006	INORG	Mercury	7439-97-6	D	20	19	2.40E-01	7.05E-02		2.7E+03		6.3E-05
A006	INORG	Nickel	7440-02-0	A	20	20	1.87E+02	1.83E+01	1.4E+05	5.1E+05	1.2E-08	3.3E-04
A006	INORG	Selenium	7782-49-2	D	20	10	1.60E+00	3.96E-01		1.3E+05		9.6E-06
A006	INORG	Silver	7440-22-4	D	20	2	5.50E-01			4.7E+03		1.2E-04
A006	INORG	Thallium	7440-28-0		20	8	3.70E+00	8.40E-01		1.8E+03		1.6E-03
A006	INORG	Vanadium	7440-62-2		20	20	6.88E+01	4.18E+01		1.8E+05		1.5E-04
A006	INORG	Zinc	7440-66-6	D	20	20	1.09E+03	5.48E+01		7.6E+06		1.4E-04
A008	VOC	Acetone	67-64-1	ID	14	1	1.30E+00			2.7E+06		4.9E-07
A008	VOC	2-Butanone	78-93-3	ID	14	2	2.80E-01			3.9E+06		7.3E-08
A008	VOC	Methyl Acetate	79-20-9		14	1	1.40E+01			8.1E+06		1.7E-06
A008	VOC	Methylene Chloride	75-09-2	B2	14	3	3.45E-02		2.5E+04	4.1E+05	1.4E-11	8.4E-08
A008	SVOC	Anthracene	120-12-7	D	14	2	1.70E-01			5.4E+06		3.2E-08
A008	SVOC	Benzo(a)anthracene	56-55-3	B2	14	2	4.50E-02		1.7E+03		2.7E-10	
A008	SVOC	Benzo(a)pyrene	50-32-8	B2	14	3	6.30E-02		1.7E+02		3.7E-09	
A008	SVOC	Benzo(b)fluoranthene	205-99-2	B2	14	4	8.50E-02		1.7E+03		5.1E-10	
A008	SVOC	Benzo(g,h,i)perylene	191-24-2	D	14	2	4.40E-02			5.3E+05		8.3E-08
A008	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	14	2	4.70E-02		9.5E+04	3.8E+05	5.0E-12	1.2E-07
A008	SVOC	Carbazole	86-74-8	B2	14	1	6.40E-02		6.4E+04		1.0E-11	
A008	SVOC	Chrysene	218-01-9	B2	14	3	6.20E-02		1.7E+05		3.7E-12	
A008	SVOC	Dibenzofuran	132-64-9	D	14	1	3.60E-02			7.2E+04		5.0E-07
A008	SVOC	Fluoranthene	206-44-0	D	14	3	9.60E-02			6.9E+05		1.4E-07
A008	SVOC	Fluorene	86-73-7	D	14	1	3.80E-02			6.3E+05		6.1E-08
A008	SVOC	Phenanthrene	85-01-8	D	14	2	1.70E-01			4.9E+05		3.4E-07
A008	SVOC	Phenol	108-95-2	ID	14	1	4.70E-01			5.8E+06		8.2E-08
A008	SVOC	Pyrene	129-00-0	D	14	3	9.20E-02			5.2E+05		1.8E-07
A008	P/PCB	PCBs (total)	1336-36-3	B2	14	11	2.64E+00		5.6E+02	3.5E+02	4.7E-08	7.5E-03

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A008	INORG	Aluminum	7429-90-5	D	14	14	1.60E+04	1.48E+04		2.2E+06		5.2E-04
A008	INORG	Antimony	7440-36-0		14	3	1.60E+00	4.40E-01		1.0E+04		1.2E-04
A008	INORG	Arsenic	7440-38-2	A	14	14	2.73E+01	1.13E+01	9.5E+02	7.0E+03	1.7E-07	2.3E-03
A008	INORG	Barium	7440-39-3	D	14	14	3.00E+02	8.38E+01		1.8E+06		1.2E-04
A008	INORG	Beryllium	7440-41-7	B1	14	13	6.70E+00	5.70E-01	1.4E+04	8.2E+03	4.3E-09	7.5E-04
A008	INORG	Cadmium	7440-43-9	B1	14	12	2.20E+00	5.52E-01	1.9E+04	1.8E+04	8.7E-10	9.0E-05
A008	INORG	Chromium (total)	7440-47-3		14	14	3.97E+01	2.82E+01	2.8E+03	7.7E+04	4.1E-08	1.5E-04
A008	INORG	Cobalt	7440-48-4	B1	14	14	8.56E+01	1.00E+01	1.2E+04	9.6E+03	6.2E-08	7.9E-03
A008	INORG	Copper	7440-50-8	D	14	14	3.56E+01	1.89E+01		1.0E+06		1.7E-05
A008	INORG	Cyanide (total)	57-12-5	D	14	1	1.20E-01			5.0E+05		2.4E-07
A008	INORG	Iron	7439-89-6	D	14	14	3.63E+04	2.44E+04		7.7E+06		1.6E-03
A008	INORG	Manganese	7439-96-5	D	14	14	2.90E+03	6.76E+02		2.4E+04		9.2E-02
A008	INORG	Mercury	7439-97-6	D	14	12	2.40E-01	7.05E-02		2.7E+03		6.3E-05
A008	INORG	Nickel	7440-02-0	A	14	14	1.28E+02	1.83E+01	1.4E+05	5.1E+05	7.7E-09	2.1E-04
A008	INORG	Selenium	7782-49-2	D	14	6	2.40E+00	3.96E-01		1.3E+05		1.6E-05
A008	INORG	Thallium	7440-28-0		14	2	3.25E+00	8.40E-01		1.8E+03		1.4E-03
A008	INORG	Vanadium	7440-62-2		14	14	5.32E+01	4.18E+01		1.8E+05		6.5E-05
A008	INORG	Zinc	7440-66-6	D	14	14	1.19E+02	5.48E+01		7.6E+06		8.5E-06
A009	VOC	Acetone	67-64-1	ID	8	2	4.60E-02			2.7E+06		1.7E-08
A009	VOC	2-Butanone	78-93-3	ID	8	1	1.30E-02			3.9E+06		3.4E-09
A009	VOC	Chlorobenzene	108-90-7	D	8	1	1.70E-02			2.7E+04		6.2E-07
A009	VOC	Cumene	98-82-8	D	8	1	8.25E-04			4.7E+04		1.8E-08
A009	VOC	1,2-Dichlorobenzene	95-50-1	D	8	1	6.65E-03			2.0E+05		3.3E-08
A009	VOC	1,3-Dichlorobenzene	541-73-1	D	8	1	1.75E-02			2.1E+04		8.3E-07
A009	VOC	1,4-Dichlorobenzene	106-46-7	C	8	2	7.65E-02		9.6E+03	3.9E+05	7.9E-11	2.0E-07
A009	VOC	4-Methyl-2-pentanone	108-10-1	ID	8	1	1.60E-03			2.8E+06		5.6E-10
A009	VOC	Methylene Chloride	75-09-2	B2	8	1	3.00E-03		2.5E+04	4.1E+05	1.2E-12	7.3E-09
A009	VOC	Toluene	108-88-3	D	8	1	4.50E-04			1.2E+05		3.8E-09
A009	SVOC	Anthracene	120-12-7	D	8	2	1.10E-01			5.4E+06		2.1E-08
A009	SVOC	Benzo(a)anthracene	56-55-3	B2	8	3	3.30E-01		1.7E+03		2.0E-09	
A009	SVOC	Benzo(a)pyrene	50-32-8	B2	8	3	3.10E-01		1.7E+02		1.8E-08	
A009	SVOC	Benzo(b)fluoranthene	205-99-2	B2	8	4	4.50E-01		1.7E+03		2.7E-09	
A009	SVOC	Benzo(g,h,i)perylene	191-24-2	D	8	3	1.70E-01			5.3E+05		3.2E-07
A009	SVOC	Benzo(k)fluoranthene	207-08-9	B2	8	2	1.50E-01		1.7E+04		8.9E-11	
A009	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	1	5.85E-01		9.5E+04	3.8E+05	6.2E-11	1.5E-06
A009	SVOC	Carbazole	86-74-8	B2	8	1	6.30E-02		6.4E+04		9.8E-12	
A009	SVOC	Chrysene	218-01-9	B2	8	4	3.80E-01		1.7E+05		2.3E-11	
A009	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	8	1	4.00E-02		1.7E+02		2.4E-09	
A009	SVOC	Dibenzofuran	132-64-9	D	8	1	7.30E-02			7.2E+04		1.0E-06
A009	SVOC	Di-n-octylphthalate	117-84-0		8	1	9.30E-01			7.7E+05		1.2E-06
A009	SVOC	Fluoranthene	206-44-0	D	8	4	7.60E-01			6.9E+05		1.1E-06
A009	SVOC	Fluorene	86-73-7	D	8	1	1.90E-01			6.3E+05		3.0E-07
A009	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	8	2	1.70E-01		1.7E+03		1.0E-09	
A009	SVOC	Methylphenol (total)	1319-77-3		8	1	2.64E-01			7.0E+05		3.8E-07
A009	SVOC	Phenanthrene	85-01-8	D	8	3	6.60E-01			4.9E+05		1.3E-06
A009	SVOC	Phenol	108-95-2	ID	8	2	3.70E+00			5.8E+06		6.4E-07
A009	SVOC	Pyrene	129-00-0	D	8	4	6.40E-01			5.2E+05		1.2E-06
A009	P/PCB	PCBs (total)	1336-36-3	B2	8	8	3.69E+03		5.6E+02	3.5E+02	6.6E-05	1.1E+01
A009	INORG	Aluminum	7429-90-5	D	8	8	1.26E+04	1.48E+04		2.2E+06		
A009	INORG	Antimony	7440-36-0		5	1	4.20E-01	4.40E-01		1.0E+04		
A009	INORG	Arsenic	7440-38-2	A	8	8	8.40E+00	1.13E+01	9.5E+02	7.0E+03		
A009	INORG	Barium	7440-39-3	D	8	8	1.56E+02	8.38E+01		1.8E+06		4.0E-05
A009	INORG	Beryllium	7440-41-7	B1	8	4	5.50E-01	5.70E-01	1.4E+04	8.2E+03		
A009	INORG	Cadmium	7440-43-9	B1	8	7	3.80E-01	5.52E-01	1.9E+04	1.8E+04		
A009	INORG	Chromium (total)	7440-47-3		8	8	2.60E+01	2.82E+01	2.8E+03	7.7E+04		
A009	INORG	Cobalt	7440-48-4	B1	8	8	5.40E+00	1.00E+01	1.2E+04	9.6E+03		
A009	INORG	Copper	7440-50-8	D	8	8	2.20E+02	1.89E+01		1.0E+06		2.0E-04
A009	INORG	Cyanide (total)	57-12-5	D	8	1	2.00E-01			5.0E+05		4.0E-07
A009	INORG	Iron	7439-89-6	D	8	8	3.74E+04	2.44E+04		7.7E+06		1.7E-03
A009	INORG	Manganese	7439-96-5	D	8	8	1.83E+02	6.76E+02		2.4E+04		
A009	INORG	Mercury	7439-97-6	D	8	7	9.20E-02	7.05E-02		2.7E+03		8.0E-06
A009	INORG	Nickel	7440-02-0	A	8	8	1.46E+01	1.83E+01	1.4E+05	5.1E+05		
A009	INORG	Selenium	7782-49-2	D	8	2	7.65E-01	3.96E-01		1.3E+05		2.9E-06
A009	INORG	Thallium	7440-28-0		8	4	1.00E+00	8.40E-01		1.8E+03		9.1E-05
A009	INORG	Vanadium	7440-62-2		8	8	4.55E+01	4.18E+01		1.8E+05		2.1E-05
A009	INORG	Zinc	7440-66-6	D	8	8	5.66E+01	5.48E+01		7.6E+06		2.4E-07
A011	VOC	2-Butanone	78-93-3	ID	7	4	8.60E-03			3.9E+06		2.2E-09
A011	VOC	Chlorobenzene	108-90-7	D	7	1	1.10E-02			2.7E+04		4.0E-07
A011	VOC	1,3-Dichlorobenzene	541-73-1	D	7	2	7.20E-03			2.1E+04		3.4E-07
A011	VOC	1,4-Dichlorobenzene	106-46-7	C	7	2	1.90E-02		9.6E+03	3.9E+05	2.0E-11	4.9E-08
A011	VOC	cis-1,2-Dichloroethene	156-59-2	D	7	1	7.90E-03			7.4E+03		1.1E-06
A011	VOC	Methyl Acetate	79-20-9		7	2	2.10E-03			8.1E+06		2.6E-10
A011	VOC	Methylene Chloride	75-09-2	B2	7	1	2.80E-03		2.5E+04	4.1E+05	1.1E-12	6.8E-09
A011	VOC	Tetrachloroethene	127-18-4	C-B2	7	1	2.10E-02		3.9E+03	5.9E+04	5.4E-11	3.6E-07
A011	VOC	Toluene	108-88-3	D	7	2	1.60E-03			1.2E+05		1.4E-08
A011	VOC	Trichloroethene	79-01-6	C-B2	7	1	2.80E-03		9.6E+03	1.5E+05	2.9E-12	1.8E-08
A011	SVOC	Benzo(a)anthracene	56-55-3	B2	7	2	1.30E-01		1.7E+03		7.7E-10	

**Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A011	SVOC	Benzo(a)pyrene	50-32-8	B2	7	1	1.40E-01		1.7E+02		8.2E-09	
A011	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	2	1.60E-01		1.7E+03		9.6E-10	
A011	SVOC	Benzo(k)fluoranthene	207-08-9	B2	7	1	1.25E-01		1.7E+04		7.4E-11	
A011	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	2	5.10E+00		9.5E+04	3.8E+05	5.4E-10	1.3E-05
A011	SVOC	Chrysene	218-01-9	B2	7	1	1.10E-01		1.7E+05		6.6E-12	
A011	SVOC	Diethylphthalate	84-66-2	D	7	1	3.55E-01			1.3E+07		2.6E-08
A011	SVOC	Di-n-octylphthalate	117-84-0		7	2	6.00E+00			7.7E+05		7.8E-06
A011	SVOC	Fluoranthene	206-44-0	D	7	2	1.90E-01			6.9E+05		2.7E-07
A011	SVOC	Phenanthrene	85-01-8	D	7	2	1.40E-01			4.9E+05		2.8E-07
A011	SVOC	Phenol	108-95-2	ID	7	1	2.30E-01			5.8E+06		4.0E-08
A011	SVOC	Pyrene	129-00-0	D	7	1	1.60E-01			5.2E+05		3.1E-07
A011	P/PCB	PCBs (total)	1336-36-3	B2	7	7	6.99E+02		5.6E+02	3.5E+02	1.2E-05	2.0E+00
A011	INORG	Aluminum	7429-90-5	D	7	7	2.07E+04	1.48E+04		2.2E+06		2.7E-03
A011	INORG	Antimony	7440-36-0		7	2	1.12E+01	4.40E-01		1.0E+04		1.1E-03
A011	INORG	Arsenic	7440-38-2	A	7	7	4.42E+01	1.13E+01	9.5E+02	7.0E+03	3.5E-07	4.7E-03
A011	INORG	Barium	7440-39-3	D	7	7	1.36E+02	8.38E+01		1.8E+06		2.9E-05
A011	INORG	Beryllium	7440-41-7	B1	7	7	1.30E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-10	8.9E-05
A011	INORG	Cadmium	7440-43-9	B1	7	7	7.70E-01	5.52E-01	1.9E+04	1.8E+04	1.2E-10	1.2E-05
A011	INORG	Chromium (total)	7440-47-3		7	7	1.08E+03	2.82E+01	2.8E+03	7.7E+04	3.7E-06	1.4E-02
A011	INORG	Cobalt	7440-48-4	B1	7	7	5.61E+01	1.00E+01	1.2E+04	9.6E+03	3.8E-08	4.8E-03
A011	INORG	Copper	7440-50-8	D	7	7	1.96E+03	1.89E+01		1.0E+06		1.9E-03
A011	INORG	Cyanide (total)	57-12-5	D	7	1	2.50E-01			5.0E+05		5.0E-07
A011	INORG	Iron	7439-89-6	D	7	7	3.36E+05	2.44E+04		7.7E+06		4.1E-02
A011	INORG	Manganese	7439-96-5	D	7	7	2.81E+03	6.76E+02		2.4E+04		8.8E-02
A011	INORG	Mercury	7439-97-6	D	7	5	3.10E-01	7.05E-02		2.7E+03		8.9E-05
A011	INORG	Nickel	7440-02-0	A	7	7	1.83E+03	1.83E+01	1.4E+05	5.1E+05	1.3E-07	3.5E-03
A011	INORG	Selenium	7782-49-2	D	7	3	3.70E+00	3.96E-01		1.3E+05		2.6E-05
A011	INORG	Thallium	7440-28-0		7	4	1.40E+00	8.40E-01		1.8E+03		3.2E-04
A011	INORG	Vanadium	7440-62-2		7	7	4.43E+01	4.18E+01		1.8E+05		1.4E-05
A011	INORG	Zinc	7440-66-6	D	7	7	4.45E+02	5.48E+01		7.6E+06		5.2E-05
A015	VOC	Benzene	71-43-2	A	3	1	3.10E-02		1.7E+03	5.8E+03	1.8E-10	5.3E-06
A015	VOC	2-Butanone	78-93-3	ID	3	1	4.85E-02			3.9E+06		1.3E-08
A015	VOC	1,4-Dichlorobenzene	106-46-7	C	3	1	2.30E-02		9.6E+03	3.9E+05	2.4E-11	5.9E-08
A015	VOC	cis-1,2-Dichloroethene	156-59-2	D	3	1	9.00E-01			7.4E+03		1.2E-04
A015	VOC	trans-1,2-Dichloroethene	156-60-5		3	1	1.10E-01			1.2E+04		9.4E-06
A015	VOC	Ethyl Benzene	100-41-4	D	3	2	1.90E-02			3.5E+05		5.4E-08
A015	VOC	Methyl Acetate	79-20-9		3	1	2.70E-02			8.1E+06		3.3E-09
A015	VOC	Methylene Chloride	75-09-2	B2	3	2	2.45E-02		2.5E+04	4.1E+05	9.8E-12	6.0E-08
A015	VOC	Tetrachloroethene	127-18-4	C-B2	3	1	9.20E-01		3.9E+03	5.9E+04	2.4E-09	1.6E-05
A015	VOC	Toluene	108-88-3	D	3	1	2.20E-01			1.2E+05		1.9E-06
A015	VOC	Trichloroethene	79-01-6	C-B2	3	1	2.80E-01		9.6E+03	1.5E+05	2.9E-10	1.8E-06
A015	VOC	Vinyl Chloride	75-01-4	A	3	1	3.20E-01		3.8E+02	6.3E+03	8.3E-09	5.0E-05
A015	VOC	Xylenes (total)	1330-20-7	ID	3	1	1.15E-02			4.5E+04		2.6E-07
A015	SVOC	Acenaphthene	83-32-9		3	1	5.05E-02			8.2E+05		6.2E-08
A015	SVOC	Anthracene	120-12-7	D	3	2	6.38E-02			5.4E+06		1.2E-08
A015	SVOC	Benzo(a)anthracene	56-55-3	B2	3	2	2.06E-01		1.7E+03		1.2E-09	
A015	SVOC	Benzo(a)pyrene	50-32-8	B2	3	2	2.37E-01		1.7E+02		1.4E-08	
A015	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	2	3.45E-01		1.7E+03		2.1E-09	
A015	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	2	1.55E-01			5.3E+05		2.9E-07
A015	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	2	1.20E-01		1.7E+04		7.1E-11	
A015	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	4.98E-02		9.5E+04	3.8E+05	5.2E-12	1.3E-07
A015	SVOC	Carbazole	86-74-8	B2	3	2	5.08E-02		6.4E+04		7.9E-12	
A015	SVOC	Chrysene	218-01-9	B2	3	2	2.59E-01		1.7E+05		1.6E-11	
A015	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3	2	4.95E-02		1.7E+02		2.9E-09	
A015	SVOC	Di-n-butylphthalate	84-74-2	D	3	1	3.75E-01			1.9E+06		2.0E-07
A015	SVOC	Fluoranthene	206-44-0	D	3	3	5.25E-01			6.9E+05		7.6E-07
A015	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	2	1.54E-01		1.7E+03		9.1E-10	
A015	SVOC	Naphthalene	91-20-3	C	3	1	4.18E-02			1.2E+04		3.4E-06
A015	SVOC	Phenanthrene	85-01-8	D	3	3	2.87E-01			4.9E+05		5.8E-07
A015	SVOC	Phenol	108-95-2	ID	3	3	1.85E-01			5.8E+06		3.2E-08
A015	SVOC	Pyrene	129-00-0	D	3	3	4.30E-01			5.2E+05		8.2E-07
A015	P/PCB	PCBs (total)	1336-36-3	B2	3	3	3.76E+01		5.6E+02	3.5E+02	6.7E-07	1.1E-01
A015	INORG	Aluminum	7429-90-5	D	3	3	2.14E+04	1.48E+04		2.2E+06		3.0E-03
A015	INORG	Antimony	7440-36-0		3	2	1.60E+00	4.40E-01		1.0E+04		1.2E-04
A015	INORG	Arsenic	7440-38-2	A	3	3	1.75E+01	1.13E+01	9.5E+02	7.0E+03	6.5E-08	9.0E-04
A015	INORG	Barium	7440-39-3	D	3	3	5.52E+02	8.38E+01		1.8E+06		2.6E-04
A015	INORG	Beryllium	7440-41-7	B1	3	1	6.70E+00	5.70E-01	1.4E+04	8.2E+03	4.3E-09	7.5E-04
A015	INORG	Cadmium	7440-43-9	B1	3	2	8.20E-01	5.52E-01	1.9E+04	1.8E+04	1.4E-10	1.5E-05
A015	INORG	Chromium (total)	7440-47-3		3	3	1.09E+02	2.82E+01	2.8E+03	7.7E+04	2.8E-07	1.1E-03
A015	INORG	Cobalt	7440-48-4	B1	3	3	3.14E+01	1.00E+01	1.2E+04	9.6E+03	1.8E-08	2.2E-03
A015	INORG	Copper	7440-50-8	D	3	3	5.41E+02	1.89E+01		1.0E+06		5.2E-04
A015	INORG	Iron	7439-89-6	D	3	3	3.69E+04	2.44E+04		7.7E+06		1.6E-03
A015	INORG	Manganese	7439-96-5	D	3	3	1.12E+03	6.76E+02		2.4E+04		1.8E-02
A015	INORG	Mercury	7439-97-6	D	3	3	5.00E+00	7.05E-02		2.7E+03		1.8E-03
A015	INORG	Nickel	7440-02-0	A	3	3	1.13E+03	1.83E+01	1.4E+05	5.1E+05	7.8E-08	2.2E-03
A015	INORG	Selenium	7782-49-2	D	3	1	1.20E+00	3.96E-01		1.3E+05		6.4E-06
A015	INORG	Silver	7440-22-4	D	3	3	4.80E-01			4.7E+03		1.0E-04

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A015	INORG	Thallium	7440-28-0		3	1	4.40E+00	8.40E-01		1.8E+03		2.0E-03
A015	INORG	Vanadium	7440-62-2		3	3	4.91E+01	4.18E+01		1.8E+05		4.1E-05
A015	INORG	Zinc	7440-66-6	D	3	3	1.60E+02	5.48E+01		7.6E+06		1.4E-05
A018	VOC	Acetone	67-64-1	ID	5	2	3.40E-01			2.7E+06		1.3E-07
A018	VOC	Benzene	71-43-2	A	5	1	8.00E-03		1.7E+03	5.8E+03	4.6E-11	1.4E-06
A018	VOC	cis-1,2-Dichloroethene	156-59-2	D	5	1	6.30E-02			7.4E+03		8.5E-06
A018	VOC	Methyl Acetate	79-20-9		5	1	3.10E-02			8.1E+06		3.8E-09
A018	VOC	Methylcyclohexane	108-87-2		5	1	1.20E-02			2.5E+05		4.7E-08
A018	VOC	Methylene Chloride	75-09-2	B2	5	2	2.85E-02		2.5E+04	4.1E+05	1.1E-11	6.9E-08
A018	VOC	Tetrachloroethene	127-18-4	C-B2	5	2	1.10E+00		3.9E+03	5.9E+04	2.8E-09	1.9E-05
A018	VOC	Toluene	108-88-3	D	5	2	2.60E-02			1.2E+05		2.2E-07
A018	VOC	Trichloroethene	79-01-6	C-B2	5	1	2.10E-01		9.6E+03	1.5E+05	2.2E-10	1.4E-06
A018	SVOC	Acenaphthylene	208-96-8	D	5	1	7.40E-02			4.0E+05		1.8E-07
A018	SVOC	Anthracene	120-12-7	D	5	3	7.30E-02			5.4E+06		1.4E-08
A018	SVOC	Benzo(a)anthracene	56-55-3	B2	5	4	2.10E-01		1.7E+03		1.2E-09	
A018	SVOC	Benzo(a)pyrene	50-32-8	B2	5	4	2.00E-01		1.7E+02		1.2E-08	
A018	SVOC	Benzo(b)fluoranthene	205-99-2	B2	5	4	3.20E-01		1.7E+03		1.9E-09	
A018	SVOC	Benzo(g,h,i)perylene	191-24-2	D	5	4	1.30E-01			5.3E+05		2.5E-07
A018	SVOC	Benzo(k)fluoranthene	207-08-9	B2	5	4	2.10E-01		1.7E+04		1.2E-10	
A018	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	5	1	1.20E-01		9.5E+04	3.8E+05	1.3E-11	3.1E-07
A018	SVOC	Butylbenzylphthalate	85-68-7	C	5	1	1.20E-01			3.8E+06		3.2E-08
A018	SVOC	Carbazole	86-74-8	B2	5	1	5.70E-02		6.4E+04		8.9E-12	
A018	SVOC	Chrysene	218-01-9	B2	5	4	2.00E-01		1.7E+05		1.2E-11	
A018	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	5	2	8.20E-02		1.7E+02		4.8E-09	
A018	SVOC	Dibenzofuran	132-64-9	D	5	1	7.00E-02			7.2E+04		9.8E-07
A018	SVOC	Di-n-butylphthalate	84-74-2	D	5	1	1.00E-01			1.9E+06		5.2E-08
A018	SVOC	Fluoranthene	206-44-0	D	5	4	3.60E-01			6.9E+05		5.2E-07
A018	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	5	4	1.30E-01		1.7E+03		7.7E-10	
A018	SVOC	Phenanthrene	85-01-8	D	5	4	1.70E-01			4.9E+05		3.4E-07
A018	SVOC	Pyrene	129-00-0	D	5	4	2.80E-01			5.2E+05		5.4E-07
A018	P/PCB	PCBs (total)	1336-36-3	B2	5	4	1.92E+01		5.6E+02	3.5E+02	3.4E-07	5.5E-02
A018	INORG	Aluminum	7429-90-5	D	5	5	1.63E+04	1.48E+04		2.2E+06		6.7E-04
A018	INORG	Antimony	7440-36-0		5	5	1.60E+00	4.40E-01		1.0E+04		1.2E-04
A018	INORG	Arsenic	7440-38-2	A	5	5	1.13E+01	1.13E+01	9.5E+02	7.0E+03	4.5E-10	6.2E-06
A018	INORG	Barium	7440-39-3	D	5	5	1.21E+02	8.38E+01		1.8E+06		2.1E-05
A018	INORG	Beryllium	7440-41-7	B1	5	5	8.50E-01	5.70E-01	1.4E+04	8.2E+03	2.0E-10	3.4E-05
A018	INORG	Cadmium	7440-43-9	B1	5	4	1.20E+00	5.52E-01	1.9E+04	1.8E+04	3.4E-10	3.5E-05
A018	INORG	Chromium (total)	7440-47-3		5	5	2.48E+02	2.82E+01	2.8E+03	7.7E+04	7.7E-07	2.9E-03
A018	INORG	Cobalt	7440-48-4	B1	5	5	3.46E+02	1.00E+01	1.2E+04	9.6E+03	2.8E-07	3.5E-02
A018	INORG	Copper	7440-50-8	D	5	5	2.24E+02	1.89E+01		1.0E+06		2.0E-04
A018	INORG	Iron	7439-89-6	D	5	5	5.32E+04	2.44E+04		7.7E+06		3.8E-03
A018	INORG	Manganese	7439-96-5	D	5	5	4.64E+02	6.76E+02		2.4E+04		
A018	INORG	Mercury	7439-97-6	D	5	4	1.10E+00	7.05E-02		2.7E+03		3.8E-04
A018	INORG	Nickel	7440-02-0	A	5	5	3.12E+02	1.83E+01	1.4E+05	5.1E+05	2.1E-08	5.7E-04
A018	INORG	Selenium	7782-49-2	D	5	4	2.50E+00	3.96E-01		1.3E+05		1.7E-05
A018	INORG	Silver	7440-22-4	D	5	1	3.30E-01			4.7E+03		7.0E-05
A018	INORG	Thallium	7440-28-0		5	2	2.00E+00	8.40E-01		1.8E+03		6.6E-04
A018	INORG	Vanadium	7440-62-2		5	5	1.06E+02	4.18E+01		1.8E+05		3.6E-04
A018	INORG	Zinc	7440-66-6	D	5	5	3.15E+02	5.48E+01		7.6E+06		3.4E-05
A021	VOC	Acetone	67-64-1	ID	24	11	7.00E-02			2.7E+06		2.6E-08
A021	VOC	Benzene	71-43-2	A	24	1	7.00E-03		1.7E+03	5.8E+03	4.0E-11	1.2E-06
A021	VOC	2-Butanone	78-93-3	ID	24	10	4.55E-02			3.9E+06		1.2E-08
A021	VOC	Carbon Disulfide	75-15-0		24	4	3.90E-02			5.6E+04		6.9E-07
A021	VOC	Cumene	98-82-8	D	24	1	8.50E-03			4.7E+04		1.8E-07
A021	VOC	Cyclohexane	110-82-7	ID	24	2	9.50E-03			5.8E+05		1.6E-08
A021	VOC	1,2-Dichlorobenzene	95-50-1	D	24	1	6.50E-03			2.0E+05		3.2E-08
A021	VOC	1,3-Dichlorobenzene	541-73-1	D	24	1	8.30E-03			2.1E+04		3.9E-07
A021	VOC	1,4-Dichlorobenzene	106-46-7	C	24	2	2.40E-02		9.6E+03	3.9E+05	2.5E-11	6.2E-08
A021	VOC	cis-1,2-Dichloroethene	156-59-2	D	24	1	8.00E-03			7.4E+03		1.1E-06
A021	VOC	Ethyl Benzene	100-41-4	D	24	1	6.00E-03			3.5E+05		1.7E-08
A021	VOC	Methyl Acetate	79-20-9		24	5	2.65E-02			8.1E+06		3.3E-09
A021	VOC	4-Methyl-2-pentanone	108-10-1	ID	24	1	2.20E-02			2.8E+06		7.7E-09
A021	VOC	Methylcyclohexane	108-87-2		24	2	1.05E-02			2.5E+05		4.1E-08
A021	VOC	Methylene Chloride	75-09-2	B2	24	4	2.45E-02		2.5E+04	4.1E+05	9.8E-12	6.0E-08
A021	VOC	Toluene	108-88-3	D	24	2	6.20E-03			1.2E+05		5.2E-08
A021	VOC	1,2,4-Trichlorobenzene	120-82-1	D	24	1	2.20E-02			1.8E+05		1.2E-07
A021	VOC	Trichloroethene	79-01-6	C-B2	24	1	8.50E-03		9.6E+03	1.5E+05	8.9E-12	5.5E-08
A021	VOC	Xylenes (total)	1330-20-7	ID	24	1	1.90E-02			4.5E+04		4.3E-07
A021	SVOC	Acenaphthene	83-32-9		24	1	4.50E-01			8.2E+05		5.5E-07
A021	SVOC	Acetophenone	98-86-2	D	24	1	3.80E-01			8.2E+05		4.7E-07
A021	SVOC	Anthracene	120-12-7	D	24	2	5.80E-01			5.4E+06		1.1E-07
A021	SVOC	Benzaldehyde	100-52-7		22	3	1.10E-01			6.1E+05		1.8E-07
A021	SVOC	Benzo(a)anthracene	56-55-3	B2	24	5	7.00E-01		1.7E+03		4.2E-09	
A021	SVOC	Benzo(a)pyrene	50-32-8	B2	24	7	7.80E-01		1.7E+02		4.6E-08	
A021	SVOC	Benzo(b)fluoranthene	205-99-2	B2	24	7	8.30E-01		1.7E+03		5.0E-09	
A021	SVOC	Benzo(g,h,i)perylene	191-24-2	D	24	7	4.90E-01			5.3E+05		9.2E-07
A021	SVOC	Benzo(k)fluoranthene	207-08-9	B2	24	3	4.50E-01		1.7E+04		2.7E-10	

**Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A021	SVOC	Biphenyl	92-52-4	D	24	4	2.60E-01			6.9E+05		3.7E-07
A021	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	24	4	3.50E-01		9.5E+04	3.8E+05	3.7E-11	9.1E-07
A021	SVOC	Carbazole	86-74-8	B2	24	1	1.30E-01		6.4E+04		2.0E-11	
A021	SVOC	Chrysene	218-01-9	B2	24	7	8.10E-01		1.7E+05		4.9E-11	
A021	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	24	1	1.10E-01		1.7E+02		6.5E-09	
A021	SVOC	Dibenzofuran	132-64-9	D	24	1	2.20E-01			7.2E+04		3.1E-06
A021	SVOC	2,4-Dimethylphenol	105-67-9		24	2	1.20E+00			2.9E+05		4.1E-06
A021	SVOC	Di-n-butylphthalate	84-74-2	D	24	1	9.50E-02			1.9E+06		4.9E-08
A021	SVOC	Di-n-octylphthalate	117-84-0		24	1	4.30E-01			7.7E+05		5.6E-07
A021	SVOC	Fluoranthene	206-44-0	D	24	9	2.10E+00			6.9E+05		3.0E-06
A021	SVOC	Fluorene	86-73-7	D	24	2	2.30E-01			6.3E+05		3.7E-07
A021	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	24	4	4.30E-01		1.7E+03		2.5E-09	
A021	SVOC	2-Methylnaphthalene	91-57-6	ID	24	4	5.60E-01			1.4E+04		4.1E-05
A021	SVOC	Methylphenol (total)	1319-77-3		24	2	2.33E+00			7.0E+05		3.4E-06
A021	SVOC	Naphthalene	91-20-3	C	24	2	4.00E-01			1.2E+04		3.2E-05
A021	SVOC	Phenanthrene	85-01-8	D	24	7	1.50E+00			4.9E+05		3.0E-06
A021	SVOC	Phenol	108-95-2	ID	24	2	1.10E+00			5.8E+06		1.9E-07
A021	SVOC	Pyrene	129-00-0	D	24	9	1.60E+00			5.2E+05		3.1E-06
A021	P/PCB	PCBs (total)	1336-36-3	B2	28	17	7.99E+01		5.6E+02	3.5E+02	1.4E-06	2.3E-01
A021	INORG	Aluminum	7429-90-5	D	24	24	4.09E+04	1.48E+04		2.2E+06		1.2E-02
A021	INORG	Antimony	7440-36-0		24	4	9.50E-01	4.40E-01		1.0E+04		5.1E-05
A021	INORG	Arsenic	7440-38-2	A	24	24	1.44E+01	1.13E+01	9.5E+02	7.0E+03	3.3E-08	4.5E-04
A021	INORG	Barium	7440-39-3	D	24	24	1.53E+03	8.38E+01		1.8E+06		8.1E-04
A021	INORG	Beryllium	7440-41-7	B1	24	8	1.30E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-10	8.9E-05
A021	INORG	Cadmium	7440-43-9	B1	24	18	1.20E+00	5.52E-01	1.9E+04	1.8E+04	3.4E-10	3.5E-05
A021	INORG	Chromium (total)	7440-47-3		24	24	1.01E+02	2.82E+01	2.8E+03	7.7E+04	2.6E-07	9.5E-04
A021	INORG	Cobalt	7440-48-4	B1	24	24	1.28E+02	1.00E+01	1.2E+04	9.6E+03	9.7E-08	1.2E-02
A021	INORG	Copper	7440-50-8	D	24	24	8.66E+02	1.89E+01		1.0E+06		8.4E-04
A021	INORG	Cyanide (total)	57-12-5	D	24	1	2.30E-01			5.0E+05		4.6E-07
A021	INORG	Iron	7439-89-6	D	24	24	3.81E+04	2.44E+04		7.7E+06		1.8E-03
A021	INORG	Manganese	7439-96-5	D	24	24	7.24E+02	6.76E+02		2.4E+04		2.0E-03
A021	INORG	Mercury	7439-97-6	D	24	23	1.04E+02	7.05E-02		2.7E+03		3.9E-02
A021	INORG	Nickel	7440-02-0	A	24	24	4.64E+02	1.83E+01	1.4E+05	5.1E+05	3.1E-08	8.7E-04
A021	INORG	Selenium	7782-49-2	D	24	11	1.00E+00	3.96E-01		1.3E+05		4.8E-06
A021	INORG	Silver	7440-22-4	D	24	4	5.20E-01			4.7E+03		1.1E-04
A021	INORG	Thallium	7440-28-0		24	6	8.90E-01	8.40E-01		1.8E+03		2.8E-05
A021	INORG	Vanadium	7440-62-2		24	24	5.49E+01	4.18E+01		1.8E+05		7.4E-05
A021	INORG	Zinc	7440-66-6	D	24	24	1.20E+03	5.48E+01		7.6E+06		1.5E-04
A022	VOC	Acetone	67-64-1	ID	6	2	8.40E-03			2.7E+06		3.2E-09
A022	VOC	Benzene	71-43-2	A	6	2	7.80E-04		1.7E+03	5.8E+03	4.5E-12	1.3E-07
A022	VOC	Methylene Chloride	75-09-2	B2	6	3	1.60E-03		2.5E+04	4.1E+05	6.4E-13	3.9E-09
A022	VOC	Toluene	108-88-3	D	6	2	7.60E-04			1.2E+05		6.4E-09
A022	SVOC	Acenaphthene	83-32-9		6	1	1.30E-01			8.2E+05		1.6E-07
A022	SVOC	Anthracene	120-12-7	D	6	3	2.60E-01			5.4E+06		4.8E-08
A022	SVOC	Benzo(a)anthracene	56-55-3	B2	6	6	3.80E-01		1.7E+03		2.3E-09	
A022	SVOC	Benzo(a)pyrene	50-32-8	B2	6	6	3.90E-01		1.7E+02		2.3E-08	
A022	SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	6	4.80E-01		1.7E+03		2.9E-09	
A022	SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	3	1.90E-01			5.3E+05		3.6E-07
A022	SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	3	3.10E-01		1.7E+04		1.8E-10	
A022	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	6	1	1.25E-01		9.5E+04	3.8E+05	1.3E-11	3.3E-07
A022	SVOC	Carbazole	86-74-8	B2	6	1	1.40E-01		6.4E+04		2.2E-11	
A022	SVOC	Chrysene	218-01-9	B2	6	6	4.10E-01		1.7E+05		2.5E-11	
A022	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	6	1	1.20E-01		1.7E+02		7.1E-09	
A022	SVOC	Dibenzofuran	132-64-9	D	6	1	1.10E-01			7.2E+04		1.5E-06
A022	SVOC	Fluoranthene	206-44-0	D	6	6	1.40E+00			6.9E+05		2.0E-06
A022	SVOC	Fluorene	86-73-7	D	6	1	1.20E-01			6.3E+05		1.9E-07
A022	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	3	1.90E-01		1.7E+03		1.1E-09	
A022	SVOC	Phenanthrene	85-01-8	D	6	5	1.30E+00			4.9E+05		2.6E-06
A022	SVOC	Pyrene	129-00-0	D	6	6	7.60E-01			5.2E+05		1.5E-06
A022	P/PCB	PCBs (total)	1336-36-3	B2	6	3	5.21E-02		5.6E+02	3.5E+02	9.3E-10	1.5E-04
A022	INORG	Aluminum	7429-90-5	D	6	6	1.25E+04	1.48E+04		2.2E+06		
A022	INORG	Antimony	7440-36-0		6	5	1.41E+03	4.40E-01		1.0E+04		1.4E-01
A022	INORG	Arsenic	7440-38-2	A	6	6	2.46E+01	1.13E+01	9.5E+02	7.0E+03	1.4E-07	1.9E-03
A022	INORG	Barium	7440-39-3	D	6	6	5.90E+01	8.38E+01		1.8E+06		
A022	INORG	Beryllium	7440-41-7	B1	6	4	6.40E-01	5.70E-01	1.4E+04	8.2E+03	4.9E-11	8.6E-06
A022	INORG	Cadmium	7440-43-9	B1	6	6	4.20E-01	5.52E-01	1.9E+04	1.8E+04		
A022	INORG	Chromium (total)	7440-47-3		6	6	1.57E+01	2.82E+01	2.8E+03	7.7E+04		
A022	INORG	Cobalt	7440-48-4	B1	6	6	8.50E+00	1.00E+01	1.2E+04	9.6E+03		
A022	INORG	Copper	7440-50-8	D	6	6	6.54E+02	1.89E+01		1.0E+06		6.3E-04
A022	INORG	Cyanide (amenable)	57-12-5A		6	2	2.80E-01			5.0E+05		5.6E-07
A022	INORG	Cyanide (total)	57-12-5	D	6	3	3.40E-01			5.0E+05		6.8E-07
A022	INORG	Iron	7439-89-6	D	6	6	1.93E+04	2.44E+04		7.7E+06		
A022	INORG	Manganese	7439-96-5	D	6	6	8.04E+02	6.76E+02		2.4E+04		5.3E-03
A022	INORG	Mercury	7439-97-6	D	6	6	1.70E-01	7.05E-02		2.7E+03		3.7E-05
A022	INORG	Nickel	7440-02-0	A	6	6	2.17E+01	1.83E+01	1.4E+05	5.1E+05	2.4E-10	6.6E-06
A022	INORG	Selenium	7782-49-2	D	6	1	8.20E-01	3.96E-01		1.3E+05		3.4E-06
A022	INORG	Silver	7440-22-4	D	6	1	2.90E+00			4.7E+03		6.2E-04

Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A022	INORG	Thallium	7440-28-0		6	4	9.20E-01	8.40E-01		1.8E+03		4.5E-05
A022	INORG	Vanadium	7440-62-2		6	6	2.54E+01	4.18E+01		1.8E+05		
A022	INORG	Zinc	7440-66-6	D	6	6	8.37E+01	5.48E+01		7.6E+06		3.8E-06
P205(GM)	VOC	Acetone	67-64-1	ID	1	1	1.20E-02			2.7E+06		4.5E-09
P205(GM)	P/PCB	PCBs (total)	1336-36-3	B2	27	26	5.98E+01		5.6E+02	3.5E+02	1.1E-06	1.7E-01
P205(GM)	INORG	Aluminum	7429-90-5	D	1	1	1.02E+04	1.48E+04		2.2E+06		
P205(GM)	INORG	Arsenic	7440-38-2	A	1	1	6.80E+00	1.13E+01	9.5E+02	7.0E+03		
P205(GM)	INORG	Barium	7440-39-3	D	1	1	4.55E+01	8.38E+01		1.8E+06		
P205(GM)	INORG	Beryllium	7440-41-7	B1	1	1	2.40E-01	5.70E-01	1.4E+04	8.2E+03		
P205(GM)	INORG	Cadmium	7440-43-9	B1	1	1	6.20E-02	5.52E-01	1.9E+04	1.8E+04		
P205(GM)	INORG	Chromium (total)	7440-47-3		1	1	1.60E+01	2.82E+01	2.8E+03	7.7E+04		
P205(GM)	INORG	Cobalt	7440-48-4	B1	1	1	7.30E+00	1.00E+01	1.2E+04	9.6E+03		
P205(GM)	INORG	Copper	7440-50-8	D	1	1	1.53E+01	1.89E+01		1.0E+06		
P205(GM)	INORG	Iron	7439-89-6	D	1	1	1.62E+04	2.44E+04		7.7E+06		
P205(GM)	INORG	Manganese	7439-96-5	D	1	1	1.61E+02	6.76E+02		2.4E+04		
P205(GM)	INORG	Nickel	7440-02-0	A	1	1	1.82E+01	1.83E+01	1.4E+05	5.1E+05		
P205(GM)	INORG	Selenium	7782-49-2	D	1	1	3.90E-01	3.96E-01		1.3E+05		
P205(GM)	INORG	Vanadium	7440-62-2		1	1	2.30E+01	4.18E+01		1.8E+05		
P205(GM)	INORG	Zinc	7440-66-6	D	1	1	3.95E+01	5.48E+01		7.6E+06		
P215 area	P/PCB	PCBs (total)	1336-36-3	B2	49	46	3.89E+02		5.6E+02	3.5E+02	6.9E-06	1.1E+00
P216 east	P/PCB	PCBs (total)	1336-36-3	B2	40	35	1.54E+02		5.6E+02	3.5E+02	2.7E-06	4.4E-01
P216 east	INORG	Aluminum	7429-90-5	D	1	1	2.08E+04	1.48E+04		2.2E+06		2.7E-03
P216 east	INORG	Arsenic	7440-38-2	A	1	1	1.86E+01	1.13E+01	9.5E+02	7.0E+03	7.7E-08	1.1E-03
P216 east	INORG	Barium	7440-39-3	D	1	1	1.46E+02	8.38E+01		1.8E+06		3.5E-05
P216 east	INORG	Beryllium	7440-41-7	B1	1	1	1.40E+00	5.70E-01	1.4E+04	8.2E+03	5.8E-10	1.0E-04
P216 east	INORG	Cadmium	7440-43-9	B1	1	1	3.70E-01	5.52E-01	1.9E+04	1.8E+04		
P216 east	INORG	Chromium (total)	7440-47-3		1	1	3.88E+01	2.82E+01	2.8E+03	7.7E+04	3.7E-08	1.4E-04
P216 east	INORG	Cobalt	7440-48-4	B1	1	1	1.05E+01	1.00E+01	1.2E+04	9.6E+03	3.7E-10	4.7E-05
P216 east	INORG	Copper	7440-50-8	D	1	1	1.40E+01	1.89E+01		1.0E+06		
P216 east	INORG	Iron	7439-89-6	D	1	1	3.47E+04	2.44E+04		7.7E+06		1.3E-03
P216 east	INORG	Manganese	7439-96-5	D	1	1	1.10E+03	6.76E+02		2.4E+04		1.8E-02
P216 east	INORG	Mercury	7439-97-6	D	1	1	4.50E-02	7.05E-02		2.7E+03		
P216 east	INORG	Nickel	7440-02-0	A	1	1	2.56E+01	1.83E+01	1.4E+05	5.1E+05	5.1E-10	1.4E-05
P216 east	INORG	Vanadium	7440-62-2		1	1	5.90E+01	4.18E+01		1.8E+05		9.7E-05
P216 east	INORG	Zinc	7440-66-6	D	1	1	7.10E+01	5.48E+01		7.6E+06		2.1E-06
P216 west	VOC	Acetone	67-64-1	ID	4	1	3.15E-02			2.7E+06		1.2E-08
P216 west	VOC	Toluene	108-88-3	D	4	1	8.10E-02			1.2E+05		6.8E-07
P216 west	VOC	Xylenes (total)	1330-20-7	ID	4	1	1.80E-01			4.5E+04		4.0E-06
P216 west	SVOC	2-Methylnaphthalene	91-57-6	ID	4	1	4.50E+00			1.4E+04		3.3E-04
P216 west	SVOC	Phenanthrene	85-01-8	D	4	1	1.10E-01			4.9E+05		2.2E-07
P216 west	P/PCB	PCBs (total)	1336-36-3	B2	67	61	3.13E+02		5.6E+02	3.5E+02	5.6E-06	8.9E-01
P216 west	INORG	Aluminum	7429-90-5	D	4	4	1.57E+04	1.48E+04		2.2E+06		3.8E-04
P216 west	INORG	Antimony	7440-36-0		3	1	1.01E+00	4.40E-01		1.0E+04		5.7E-05
P216 west	INORG	Arsenic	7440-38-2	A	4	4	1.36E+01	1.13E+01	9.5E+02	7.0E+03	2.5E-08	3.4E-04
P216 west	INORG	Barium	7440-39-3	D	4	4	9.14E+01	8.38E+01		1.8E+06		4.2E-06
P216 west	INORG	Beryllium	7440-41-7	B1	4	4	1.40E+00	5.70E-01	1.4E+04	8.2E+03	5.8E-10	1.0E-04
P216 west	INORG	Cadmium	7440-43-9	B1	4	3	4.30E-01	5.52E-01	1.9E+04	1.8E+04		
P216 west	INORG	Chromium (total)	7440-47-3		4	4	3.21E+01	2.82E+01	2.8E+03	7.7E+04	1.4E-08	5.1E-05
P216 west	INORG	Cobalt	7440-48-4	B1	4	4	1.30E+01	1.00E+01	1.2E+04	9.6E+03	2.4E-09	3.1E-04
P216 west	INORG	Copper	7440-50-8	D	4	4	3.34E+01	1.89E+01		1.0E+06		1.4E-05
P216 west	INORG	Iron	7439-89-6	D	4	4	3.24E+04	2.44E+04		7.7E+06		1.0E-03
P216 west	INORG	Manganese	7439-96-5	D	4	4	1.15E+03	6.76E+02		2.4E+04		2.0E-02
P216 west	INORG	Mercury	7439-97-6	D	4	3	9.00E-02	7.05E-02		2.7E+03		7.2E-06
P216 west	INORG	Nickel	7440-02-0	A	4	4	1.76E+01	1.83E+01	1.4E+05	5.1E+05		
P216 west	INORG	Selenium	7782-49-2	D	4	2	6.75E-01	3.96E-01		1.3E+05		2.2E-06
P216 west	INORG	Vanadium	7440-62-2		4	4	5.32E+01	4.18E+01		1.8E+05		6.5E-05
P216 west	INORG	Zinc	7440-66-6	D	4	4	4.95E+01	5.48E+01		7.6E+06		
Plant_Boundary	VOC	Acetone	67-64-1	ID	7	1	5.56E-02			2.7E+06		2.1E-08
Plant_Boundary	VOC	2-Butanone	78-93-3	ID	7	1	3.85E-03			3.9E+06		1.0E-09
Plant_Boundary	VOC	Methyl Acetate	79-20-9		7	2	8.25E-03			8.1E+06		1.0E-09
Plant_Boundary	VOC	Toluene	108-88-3	D	7	2	6.25E-04			1.2E+05		5.3E-09
Plant_Boundary	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	1	5.55E-02		1.7E+03		3.3E-10	
Plant_Boundary	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	6.95E-02		9.5E+04	3.8E+05	7.3E-12	1.8E-07
Plant_Boundary	SVOC	Chrysene	218-01-9	B2	7	1	4.73E-02		1.7E+05		2.9E-12	
Plant_Boundary	SVOC	Fluoranthene	206-44-0	D	7	1	8.78E-02			6.9E+05		1.3E-07
Plant_Boundary	SVOC	Phenanthrene	85-01-8	D	7	1	7.15E-02			4.9E+05		1.4E-07
Plant_Boundary	SVOC	Phenol	108-95-2	ID	7	1	1.60E+00			5.8E+06		2.8E-07
Plant_Boundary	SVOC	Pyrene	129-00-0	D	7	1	6.63E-02			5.2E+05		1.3E-07
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	8	6	3.13E+01		5.6E+02	3.5E+02	5.6E-07	9.0E-02
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	1.97E+04	1.48E+04		2.2E+06		2.2E-03
Plant_Boundary	INORG	Antimony	7440-36-0		6	3	1.01E+00	4.40E-01		1.0E+04		5.7E-05
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7	1.80E+01	1.13E+01	9.5E+02	7.0E+03	7.1E-08	9.7E-04
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	1.37E+02	8.38E+01		1.8E+06		3.0E-05
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	7	1.40E+00	5.70E-01	1.4E+04	8.2E+03	5.8E-10	1.0E-04
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	6	7.50E-01	5.52E-01	1.9E+04	1.8E+04	1.0E-10	1.1E-05
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	3.21E+01	2.82E+01	2.8E+03	7.7E+04	1.4E-08	5.1E-05
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	1.44E+01	1.00E+01	1.2E+04	9.6E+03	3.6E-09	4.6E-04

**Attachment B.7: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	4.27E+02	1.89E+01		1.0E+06		4.0E-04
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7	3.46E+04	2.44E+04		7.7E+06		1.3E-03
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	1.26E+03	6.76E+02		2.4E+04		2.4E-02
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	2.45E-01	7.05E-02		2.7E+03		6.5E-05
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	6.50E+01	1.83E+01	1.4E+05	5.1E+05	3.3E-09	9.1E-05
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	3	1.20E+00	3.96E-01		1.3E+05		6.4E-06
Plant_Boundary	INORG	Thallium	7440-28-0		7	1	1.10E+00	8.40E-01		1.8E+03		1.5E-04
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7	5.32E+01	4.18E+01		1.8E+05		6.5E-05
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	1.08E+02	5.48E+01		7.6E+06		7.0E-06
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												

Attachment B.7: High-End Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁶) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A005	VOC	Acetone	67-64-1	ID	16	4	1.90E-01			2.7E+06		7.1E-08
A005	VOC	Benzene	71-43-2	A	16	1	1.15E-02		1.7E+03	5.8E+03	6.6E-11	2.0E-06
A005	VOC	2-Butanone	78-93-3	ID	16	6	5.50E-02			3.9E+06		1.4E-08
A005	VOC	Carbon Disulfide	75-15-0		16	3	2.35E-02			5.6E+04		4.2E-07
A005	VOC	Chlorobenzene	108-90-7	D	16	3	1.10E-01			2.7E+04		4.0E-06
A005	VOC	Cumene	98-82-8	D	16	3	9.00E-02			4.7E+04		1.9E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	16	3	2.70E-01			2.0E+05		1.3E-06
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	16	3	2.90E+00			2.1E+04		1.4E-04
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	16	5	6.20E+00		9.6E+03	3.9E+05	6.4E-09	1.6E-05
A005	VOC	Dichlorodifluoromethane	75-71-8		16	1	5.80E-02			1.2E+04		4.9E-06
A005	VOC	1,2-Dichloroethane	107-06-2	B2	16	1	1.30E-02		7.7E+02	1.5E+03	1.7E-10	8.7E-06
A005	VOC	Ethyl Benzene	100-41-4	D	16	2	4.30E-02			3.5E+05		1.2E-07
A005	VOC	Methyl Acetate	79-20-9		16	4	2.00E-01			8.1E+06		2.5E-08
A005	VOC	Methylcyclohexane	108-87-2		16	3	2.90E-02			2.5E+05		1.1E-07
A005	VOC	Methylene Chloride	75-09-2	B2	16	3	4.85E-02		2.5E+04	4.1E+05	1.9E-11	1.2E-07
A005	VOC	Tetrachloroethene	127-18-4	C-B2	16	2	1.20E-02		3.9E+03	5.9E+04	3.1E-11	2.0E-07
A005	VOC	Toluene	108-88-3	D	16	2	6.10E-02			1.2E+05		5.2E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	16	3	3.00E-01			1.8E+05		1.6E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	16	2	1.90E-01			4.5E+04		4.3E-06
A005	SVOC	Benzaldehyde	100-52-7		16	1	1.10E+00			6.1E+05		1.8E-06
A005	SVOC	Benzo(a)anthracene	56-55-3	B2	16	4	7.90E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(a)pyrene	50-32-8	B2	16	1	7.40E-01		1.7E+02		4.3E-08	
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	4	7.80E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	1	4.30E-01		1.7E+04		2.5E-10	
A005	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	3	2.00E+00		9.5E+04	3.8E+05	2.1E-10	5.2E-06
A005	SVOC	Caprolactam	105-60-2		16	1	1.15E+00			6.0E+06		1.9E-07
A005	SVOC	Chrysene	218-01-9	B2	16	5	1.00E+00		1.7E+05		6.0E-11	
A005	SVOC	2,4-Dimethylphenol	105-67-9		16	3	1.50E+02			2.9E+05		5.1E-04
A005	SVOC	Di-n-octylphthalate	117-84-0		16	4	4.70E+00			7.7E+05		6.1E-06
A005	SVOC	Fluoranthene	206-44-0	D	16	4	1.20E+00			6.9E+05		1.7E-06
A005	SVOC	2-Methylnaphthalene	91-57-6	ID	16	3	6.40E-01			1.4E+04		4.6E-05
A005	SVOC	Methylphenol (total)	1319-77-3		16	2	3.05E-01			7.0E+05		4.4E-07
A005	SVOC	Naphthalene	91-20-3	C	16	2	7.60E-01			1.2E+04		6.2E-05
A005	SVOC	Phenanthrene	85-01-8	D	16	3	3.35E-01			4.9E+05		6.8E-07
A005	SVOC	Phenol	108-95-2	ID	16	4	7.50E+00			5.8E+06		1.3E-06
A005	SVOC	Pyrene	129-00-0	D	16	6	1.20E+00			5.2E+05		2.3E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	25	24	1.06E+03		5.6E+02	3.5E+02	1.9E-05	3.0E+00
A005	INORG	Aluminum	7429-90-5	D	16	16	1.77E+04	1.48E+04		2.2E+06		1.3E-03
A005	INORG	Antimony	7440-36-0		16	7	2.80E+00	4.40E-01		1.0E+04		2.3E-04
A005	INORG	Arsenic	7440-38-2	A	16	16	9.60E+00	1.13E+01	9.5E+02	7.0E+03		
A005	INORG	Barium	7440-39-3	D	16	16	1.30E+02	8.38E+01		1.8E+06		2.6E-05
A005	INORG	Beryllium	7440-41-7	B1	16	8	1.10E+00	5.70E-01	1.4E+04	8.2E+03	3.7E-10	6.5E-05
A005	INORG	Cadmium	7440-43-9	B1	16	11	9.10E-01	5.52E-01	1.9E+04	1.8E+04	1.9E-10	2.0E-05
A005	INORG	Chromium (total)	7440-47-3		16	16	1.60E+02	2.82E+01	2.8E+03	7.7E+04	4.6E-07	1.7E-03
A005	INORG	Cobalt	7440-48-4	B1	16	16	3.73E+01	1.00E+01	1.2E+04	9.6E+03	2.2E-08	2.9E-03
A005	INORG	Copper	7440-50-8	D	16	16	4.06E+02	1.89E+01		1.0E+06		3.8E-04
A005	INORG	Cyanide (total)	57-12-5	D	16	1	2.50E-01			5.0E+05		5.0E-07
A005	INORG	Iron	7439-89-6	D	16	16	4.86E+04	2.44E+04		7.7E+06		3.2E-03
A005	INORG	Manganese	7439-96-5	D	16	16	1.64E+03	6.76E+02		2.4E+04		4.0E-02
A005	INORG	Mercury	7439-97-6	D	16	15	7.90E-01	7.05E-02		2.7E+03		2.7E-04
A005	INORG	Nickel	7440-02-0	A	16	16	3.60E+02	1.83E+01	1.4E+05	5.1E+05	2.4E-08	6.7E-04
A005	INORG	Selenium	7782-49-2	D	16	4	8.10E-01	3.96E-01		1.3E+05		3.3E-06
A005	INORG	Silver	7440-22-4	D	16	4	1.80E+00			4.7E+03		3.8E-04
A005	INORG	Thallium	7440-28-0		16	3	6.60E-01	8.40E-01		1.8E+03		
A005	INORG	Vanadium	7440-62-2		16	16	7.75E+01	4.18E+01		1.8E+05		2.0E-04
A005	INORG	Zinc	7440-66-6	D	16	16	1.34E+02	5.48E+01		7.6E+06		1.0E-05
A006	VOC	Acetone	67-64-1	ID	20	1	3.95E-01			2.7E+06		1.5E-07
A006	VOC	Bromomethane	74-83-9	D	20	1	5.00E-01			6.6E+02		7.6E-04
A006	VOC	2-Butanone	78-93-3	ID	20	4	4.00E-01			3.9E+06		1.0E-07
A006	VOC	Chlorobenzene	108-90-7	D	20	4	4.00E+00			2.7E+04		1.5E-04
A006	VOC	Cumene	98-82-8	D	20	2	3.90E-02			4.7E+04		8.4E-07
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	20	5	2.60E+00			2.0E+05		1.3E-05
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	20	6	3.20E+01			2.1E+04		1.5E-03
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	20	6	8.40E+01		9.6E+03	3.9E+05	8.7E-08	2.2E-04
A006	VOC	1,2-Dichloroethane	107-06-2	B2	20	1	5.50E-02		7.7E+02	1.5E+03	7.1E-10	3.7E-05
A006	VOC	Ethyl Benzene	100-41-4	D	20	1	7.00E-02			3.5E+05		2.0E-07
A006	VOC	Methyl Acetate	79-20-9		20	5	2.20E-01			8.1E+06		2.7E-08
A006	VOC	Methylene Chloride	75-09-2	B2	20	4	3.95E-01		2.5E+04	4.1E+05	1.6E-10	9.6E-07
A006	VOC	Toluene	108-88-3	D	20	2	7.30E-01			1.2E+05		6.2E-06
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	20	4	7.80E-01			1.8E+05		4.2E-06
A006	VOC	Xylenes (total)	1330-20-7	ID	20	2	3.00E-01			4.5E+04		6.7E-06
A006	SVOC	Acenaphthene	83-32-9		20	2	1.65E+00			8.2E+05		2.0E-06
A006	SVOC	Acenaphthylene	208-96-8	D	20	1	1.55E+00			4.0E+05		3.8E-06

Attachment B.7: High-End Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁶) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A006	SVOC	Anthracene	120-12-7	D	20	1	1.60E+00			5.4E+06		3.0E-07
A006	SVOC	Benzaldehyde	100-52-7		20	2	5.50E+00			6.1E+05		9.0E-06
A006	SVOC	Benzo(a)anthracene	56-55-3	B2	20	1	1.80E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(a)pyrene	50-32-8	B2	20	1	1.95E+00		1.7E+02		1.1E-07	
A006	SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	1	1.90E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	1	1.80E+00			5.3E+05		3.4E-06
A006	SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	1	1.70E+00		1.7E+04		1.0E-09	
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	5	4.20E+01		9.5E+04	3.8E+05	4.4E-09	1.1E-04
A006	SVOC	Carbazole	86-74-8	B2	20	1	1.70E+00		6.4E+04		2.7E-10	
A006	SVOC	Chrysene	218-01-9	B2	20	1	1.50E+00		1.7E+05		9.1E-11	
A006	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	1	1.65E+00		1.7E+02		9.7E-08	
A006	SVOC	Dibenzofuran	132-64-9	D	20	1	1.65E+00			7.2E+04		2.3E-05
A006	SVOC	2,4-Dimethylphenol	105-67-9		20	2	1.30E+01			2.9E+05		4.4E-05
A006	SVOC	Di-n-octylphthalate	117-84-0		20	7	6.30E+01			7.7E+05		8.2E-05
A006	SVOC	Fluoranthene	206-44-0	D	20	2	1.80E+00			6.9E+05		2.6E-06
A006	SVOC	Fluorene	86-73-7	D	20	1	1.55E+00			6.3E+05		2.5E-06
A006	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	1	2.30E+00		1.7E+03		1.4E-08	
A006	SVOC	2-Methylnaphthalene	91-57-6	ID	20	1	1.55E+00			1.4E+04		1.1E-04
A006	SVOC	Naphthalene	91-20-3	C	20	1	1.60E+00			1.2E+04		1.3E-04
A006	SVOC	Phenanthrene	85-01-8	D	20	1	1.70E+00			4.9E+05		3.4E-06
A006	SVOC	Pyrene	129-00-0	D	20	1	1.65E+00			5.2E+05		3.2E-06
A006	P/PCB	PCBs (total)	1336-36-3	B2	23	21	1.89E+03		5.6E+02	3.5E+02	3.4E-05	5.4E+00
A006	INORG	Aluminum	7429-90-5	D	20	20	2.00E+04	1.48E+04		2.2E+06		2.3E-03
A006	INORG	Antimony	7440-36-0		17	2	9.40E-01	4.40E-01		1.0E+04		5.0E-05
A006	INORG	Arsenic	7440-38-2	A	20	20	3.70E+01	1.13E+01	9.5E+02	7.0E+03	2.7E-07	3.7E-03
A006	INORG	Barium	7440-39-3	D	20	20	3.74E+02	8.38E+01		1.8E+06		1.6E-04
A006	INORG	Beryllium	7440-41-7	B1	20	16	7.80E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-09	8.8E-04
A006	INORG	Cadmium	7440-43-9	B1	20	15	5.10E+00	5.52E-01	1.9E+04	1.8E+04	2.4E-09	2.5E-04
A006	INORG	Chromium (total)	7440-47-3		20	20	4.91E+01	2.82E+01	2.8E+03	7.7E+04	7.4E-08	2.7E-04
A006	INORG	Cobalt	7440-48-4	B1	20	20	3.07E+02	1.00E+01	1.2E+04	9.6E+03	2.4E-07	3.1E-02
A006	INORG	Copper	7440-50-8	D	20	20	6.33E+02	1.89E+01		1.0E+06		6.1E-04
A006	INORG	Cyanide (total)	57-12-5	D	20	1	3.80E-01			5.0E+05		7.5E-07
A006	INORG	Iron	7439-89-6	D	20	20	3.98E+04	2.44E+04		7.7E+06		2.0E-03
A006	INORG	Manganese	7439-96-5	D	20	20	1.88E+03	6.76E+02		2.4E+04		5.0E-02
A006	INORG	Mercury	7439-97-6	D	20	19	2.40E-01	7.05E-02		2.7E+03		6.3E-05
A006	INORG	Nickel	7440-02-0	A	20	20	1.87E+02	1.83E+01	1.4E+05	5.1E+05	1.2E-08	3.3E-04
A006	INORG	Selenium	7782-49-2	D	20	10	1.60E+00	3.96E-01		1.3E+05		9.6E-06
A006	INORG	Silver	7440-22-4	D	20	2	5.50E-01			4.7E+03		1.2E-04
A006	INORG	Thallium	7440-28-0		20	8	3.70E+00	8.40E-01		1.8E+03		1.6E-03
A006	INORG	Vanadium	7440-62-2		20	20	6.88E+01	4.18E+01		1.8E+05		1.5E-04
A006	INORG	Zinc	7440-66-6	D	20	20	1.09E+03	5.48E+01		7.6E+06		1.4E-04
A009	VOC	Acetone	67-64-1	ID	8	2	4.60E-02			2.7E+06		1.7E-08
A009	VOC	2-Butanone	78-93-3	ID	8	1	1.30E-02			3.9E+06		3.4E-09
A009	VOC	Chlorobenzene	108-90-7	D	8	1	1.70E-02			2.7E+04		6.2E-07
A009	VOC	Cumene	98-82-8	D	8	1	8.25E-04			4.7E+04		1.8E-08
A009	VOC	1,2-Dichlorobenzene	95-50-1	D	8	1	6.65E-03			2.0E+05		3.3E-08
A009	VOC	1,3-Dichlorobenzene	541-73-1	D	8	1	1.75E-02			2.1E+04		8.3E-07
A009	VOC	1,4-Dichlorobenzene	106-46-7	C	8	2	7.65E-02		9.6E+03	3.9E+05	7.9E-11	2.0E-07
A009	VOC	4-Methyl-2-pentanone	108-10-1	ID	8	1	1.60E-03			2.8E+06		5.6E-10
A009	VOC	Methylene Chloride	75-09-2	B2	8	1	3.00E-03		2.5E+04	4.1E+05	1.2E-12	7.3E-09
A009	VOC	Toluene	108-88-3	D	8	1	4.50E-04			1.2E+05		3.8E-09
A009	SVOC	Anthracene	120-12-7	D	8	2	1.10E-01			5.4E+06		2.1E-08
A009	SVOC	Benzo(a)anthracene	56-55-3	B2	8	3	3.30E-01		1.7E+03		2.0E-09	
A009	SVOC	Benzo(a)pyrene	50-32-8	B2	8	3	3.10E-01		1.7E+02		1.8E-08	
A009	SVOC	Benzo(b)fluoranthene	205-99-2	B2	8	4	4.50E-01		1.7E+03		2.7E-09	
A009	SVOC	Benzo(g,h,i)perylene	191-24-2	D	8	3	1.70E-01			5.3E+05		3.2E-07
A009	SVOC	Benzo(k)fluoranthene	207-08-9	B2	8	2	1.50E-01		1.7E+04		8.9E-11	
A009	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	1	5.85E-01		9.5E+04	3.8E+05	6.2E-11	1.5E-06
A009	SVOC	Carbazole	86-74-8	B2	8	1	6.30E-02		6.4E+04		9.8E-12	
A009	SVOC	Chrysene	218-01-9	B2	8	4	3.80E-01		1.7E+05		2.3E-11	
A009	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	8	1	4.00E-02		1.7E+02		2.4E-09	
A009	SVOC	Dibenzofuran	132-64-9	D	8	1	7.30E-02			7.2E+04		1.0E-06
A009	SVOC	Di-n-octylphthalate	117-84-0		8	1	9.30E-01			7.7E+05		1.2E-06
A009	SVOC	Fluoranthene	206-44-0	D	8	4	7.60E-01			6.9E+05		1.1E-06
A009	SVOC	Fluorene	86-73-7	D	8	1	1.90E-01			6.3E+05		3.0E-07
A009	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	8	2	1.70E-01		1.7E+03		1.0E-09	
A009	SVOC	Methylphenol (total)	1319-77-3		8	1	2.64E-01			7.0E+05		3.8E-07
A009	SVOC	Phenanthrene	85-01-8	D	8	3	6.60E-01			4.9E+05		1.3E-06
A009	SVOC	Phenol	108-95-2	ID	8	2	3.70E+00			5.8E+06		6.4E-07
A009	SVOC	Pyrene	129-00-0	D	8	4	6.40E-01			5.2E+05		1.2E-06
A009	P/PCB	PCBs (total)	1336-36-3	B2	8	8	9.67E+02		5.6E+02	3.5E+02	1.7E-05	2.8E+00
A009	INORG	Aluminum	7429-90-5	D	8	8	1.26E+04	1.48E+04		2.2E+06		
A009	INORG	Antimony	7440-36-0		5	1	4.20E-01	4.40E-01		1.0E+04		

**Attachment B.7: High-End Estimates of Risk and HQ for Construction Worker Exposure to Soil at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁶) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A009	INORG	Arsenic	7440-38-2	A	8	8	8.40E+00	1.13E+01	9.5E+02	7.0E+03		
A009	INORG	Barium	7440-39-3	D	8	8	1.56E+02	8.38E+01		1.8E+06		4.0E-05
A009	INORG	Beryllium	7440-41-7	B1	8	4	5.50E-01	5.70E-01	1.4E+04	8.2E+03		
A009	INORG	Cadmium	7440-43-9	B1	8	7	3.80E-01	5.52E-01	1.9E+04	1.8E+04		
A009	INORG	Chromium (total)	7440-47-3		8	8	2.60E+01	2.82E+01	2.8E+03	7.7E+04		
A009	INORG	Cobalt	7440-48-4	B1	8	8	5.40E+00	1.00E+01	1.2E+04	9.6E+03		
A009	INORG	Copper	7440-50-8	D	8	8	2.20E+02	1.89E+01		1.0E+06		2.0E-04
A009	INORG	Cyanide (total)	57-12-5	D	8	1	2.00E-01			5.0E+05		4.0E-07
A009	INORG	Iron	7439-89-6	D	8	8	3.74E+04	2.44E+04		7.7E+06		1.7E-03
A009	INORG	Manganese	7439-96-5	D	8	8	1.83E+02	6.76E+02		2.4E+04		
A009	INORG	Mercury	7439-97-6	D	8	7	9.20E-02	7.05E-02		2.7E+03		8.0E-06
A009	INORG	Nickel	7440-02-0	A	8	8	1.46E+01	1.83E+01	1.4E+05	5.1E+05		
A009	INORG	Selenium	7782-49-2	D	8	2	7.65E-01	3.96E-01		1.3E+05		2.9E-06
A009	INORG	Thallium	7440-28-0		8	4	1.00E+00	8.40E-01		1.8E+03		9.1E-05
A009	INORG	Vanadium	7440-62-2		8	8	4.55E+01	4.18E+01		1.8E+05		2.1E-05
A009	INORG	Zinc	7440-66-6	D	8	8	5.66E+01	5.48E+01		7.6E+06		2.4E-07
A011	VOC	2-Butanone	78-93-3	ID	7	4	8.60E-03			3.9E+06		2.2E-09
A011	VOC	Chlorobenzene	108-90-7	D	7	1	1.10E-02			2.7E+04		4.0E-07
A011	VOC	1,3-Dichlorobenzene	541-73-1	D	7	2	7.20E-03			2.1E+04		3.4E-07
A011	VOC	1,4-Dichlorobenzene	106-46-7	C	7	2	1.90E-02		9.6E+03	3.9E+05	2.0E-11	4.9E-08
A011	VOC	cis-1,2-Dichloroethene	156-59-2	D	7	1	7.90E-03			7.4E+03		1.1E-06
A011	VOC	Methyl Acetate	79-20-9		7	2	2.10E-03			8.1E+06		2.6E-10
A011	VOC	Methylene Chloride	75-09-2	B2	7	1	2.80E-03		2.5E+04	4.1E+05	1.1E-12	6.8E-09
A011	VOC	Tetrachloroethene	127-18-4	C-B2	7	1	2.10E-02		3.9E+03	5.9E+04	5.4E-11	3.6E-07
A011	VOC	Toluene	108-88-3	D	7	2	1.60E-03			1.2E+05		1.4E-08
A011	VOC	Trichloroethene	79-01-6	C-B2	7	1	2.80E-03		9.6E+03	1.5E+05	2.9E-12	1.8E-08
A011	SVOC	Benzo(a)anthracene	56-55-3	B2	7	2	1.30E-01		1.7E+03		7.7E-10	
A011	SVOC	Benzo(a)pyrene	50-32-8	B2	7	1	1.40E-01		1.7E+02		8.2E-09	
A011	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	2	1.60E-01		1.7E+03		9.6E-10	
A011	SVOC	Benzo(k)fluoranthene	207-08-9	B2	7	1	1.25E-01		1.7E+04		7.4E-11	
A011	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	2	5.10E+00		9.5E+04	3.8E+05	5.4E-10	1.3E-05
A011	SVOC	Chrysene	218-01-9	B2	7	1	1.10E-01		1.7E+05		6.6E-12	
A011	SVOC	Diethylphthalate	84-66-2	D	7	1	3.55E-01			1.3E+07		2.6E-08
A011	SVOC	Di-n-octylphthalate	117-84-0		7	2	6.00E+00			7.7E+05		7.8E-06
A011	SVOC	Fluoranthene	206-44-0	D	7	2	1.90E-01			6.9E+05		2.7E-07
A011	SVOC	Phenanthrene	85-01-8	D	7	2	1.40E-01			4.9E+05		2.8E-07
A011	SVOC	Phenol	108-95-2	ID	7	1	2.30E-01			5.8E+06		4.0E-08
A011	SVOC	Pyrene	129-00-0	D	7	1	1.60E-01			5.2E+05		3.1E-07
A011	P/PCB	PCBs (total)	1336-36-3	B2	9	7	1.05E+02		5.6E+02	3.5E+02	1.9E-06	3.0E-01
A011	INORG	Aluminum	7429-90-5	D	7	7	2.07E+04	1.48E+04		2.2E+06		2.7E-03
A011	INORG	Antimony	7440-36-0		7	2	1.12E+01	4.40E-01		1.0E+04		1.1E-03
A011	INORG	Arsenic	7440-38-2	A	7	7	4.42E+01	1.13E+01	9.5E+02	7.0E+03	3.5E-07	4.7E-03
A011	INORG	Barium	7440-39-3	D	7	7	1.36E+02	8.38E+01		1.8E+06		2.9E-05
A011	INORG	Beryllium	7440-41-7	B1	7	7	1.30E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-10	8.9E-05
A011	INORG	Cadmium	7440-43-9	B1	7	7	7.70E-01	5.52E-01	1.9E+04	1.8E+04	1.2E-10	1.2E-05
A011	INORG	Chromium (total)	7440-47-3		7	7	1.08E+03	2.82E+01	2.8E+03	7.7E+04	3.7E-06	1.4E-02
A011	INORG	Cobalt	7440-48-4	B1	7	7	5.61E+01	1.00E+01	1.2E+04	9.6E+03	3.8E-08	4.8E-03
A011	INORG	Copper	7440-50-8	D	7	7	1.96E+03	1.89E+01		1.0E+06		1.9E-03
A011	INORG	Cyanide (total)	57-12-5	D	7	1	2.50E-01			5.0E+05		5.0E-07
A011	INORG	Iron	7439-89-6	D	7	7	3.36E+05	2.44E+04		7.7E+06		4.1E-02
A011	INORG	Manganese	7439-96-5	D	7	7	2.81E+03	6.76E+02		2.4E+04		8.8E-02
A011	INORG	Mercury	7439-97-6	D	7	5	3.10E-01	7.05E-02		2.7E+03		8.9E-05
A011	INORG	Nickel	7440-02-0	A	7	7	1.83E+03	1.83E+01	1.4E+05	5.1E+05	1.3E-07	3.5E-03
A011	INORG	Selenium	7782-49-2	D	7	3	3.70E+00	3.96E-01		1.3E+05		2.6E-05
A011	INORG	Thallium	7440-28-0		7	4	1.40E+00	8.40E-01		1.8E+03		3.2E-04
A011	INORG	Vanadium	7440-62-2		7	7	4.43E+01	4.18E+01		1.8E+05		1.4E-05
A011	INORG	Zinc	7440-66-6	D	7	7	4.45E+02	5.48E+01		7.6E+06		5.2E-05
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												
4. All concentrations are the maximum detected in an area, except concentrations in bold are 95% UCLs.												

**Attachment B.7: Estimates of Risk and HQ for Construction Worker Exposure to Soil with Precautions in Place at Certain Locations
at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A005	VOC	Acetone	67-64-1	ID	16	4	1.90E-01			2.7E+06		7.1E-08
A005	VOC	Benzene	71-43-2	A	16	1	1.15E-02		1.7E+03	5.8E+03	6.6E-11	2.0E-06
A005	VOC	2-Butanone	78-93-3	ID	16	6	5.50E-02			3.9E+06		1.4E-08
A005	VOC	Carbon Disulfide	75-15-0		16	3	2.35E-02			5.6E+04		4.2E-07
A005	VOC	Chlorobenzene	108-90-7	D	16	3	1.10E-01			2.7E+04		4.0E-06
A005	VOC	Cumene	98-82-8	D	16	3	9.00E-02			4.7E+04		1.9E-06
A005	VOC	1,2-Dichlorobenzene	95-50-1	D	16	3	2.70E-01			2.0E+05		1.3E-06
A005	VOC	1,3-Dichlorobenzene	541-73-1	D	16	3	2.90E+00			2.1E+04		1.4E-04
A005	VOC	1,4-Dichlorobenzene	106-46-7	C	16	5	6.20E+00		9.6E+03	3.9E+05	6.4E-09	1.6E-05
A005	VOC	Dichlorodifluoromethane	75-71-8		16	1	5.80E-02			1.2E+04		4.9E-06
A005	VOC	1,2-Dichloroethane	107-06-2	B2	16	1	1.30E-02		7.7E+02	1.5E+03	1.7E-10	8.7E-06
A005	VOC	Ethyl Benzene	100-41-4	D	16	2	4.30E-02			3.5E+05		1.2E-07
A005	VOC	Methyl Acetate	79-20-9		16	4	2.00E-01			8.1E+06		2.5E-08
A005	VOC	Methylcyclohexane	108-87-2		16	3	2.90E-02			2.5E+05		1.1E-07
A005	VOC	Methylene Chloride	75-09-2	B2	16	3	4.85E-02		2.5E+04	4.1E+05	1.9E-11	1.2E-07
A005	VOC	Tetrachloroethene	127-18-4	C-B2	16	2	1.20E-02		3.9E+03	5.9E+04	3.1E-11	2.0E-07
A005	VOC	Toluene	108-88-3	D	16	2	6.10E-02			1.2E+05		5.2E-07
A005	VOC	1,2,4-Trichlorobenzene	120-82-1	D	16	3	3.00E-01			1.8E+05		1.6E-06
A005	VOC	Xylenes (total)	1330-20-7	ID	16	2	1.90E-01			4.5E+04		4.3E-06
A005	SVOC	Benzaldehyde	100-52-7		16	1	1.10E+00			6.1E+05		1.8E-06
A005	SVOC	Benzo(a)anthracene	56-55-3	B2	16	4	7.90E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(a)pyrene	50-32-8	B2	16	1	7.40E-01		1.7E+02		4.3E-08	
A005	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	4	7.80E-01		1.7E+03		4.7E-09	
A005	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	1	4.30E-01		1.7E+04		2.5E-10	
A005	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	3	2.00E+00		9.5E+04	3.8E+05	2.1E-10	5.2E-06
A005	SVOC	Caprolactam	105-60-2		16	1	1.15E+00			6.0E+06		1.9E-07
A005	SVOC	Chrysene	218-01-9	B2	16	5	1.00E+00		1.7E+05		6.0E-11	
A005	SVOC	2,4-Dimethylphenol	105-67-9		16	3	1.50E+02			2.9E+05		5.1E-04
A005	SVOC	Di-n-octylphthalate	117-84-0		16	4	4.70E+00			7.7E+05		6.1E-06
A005	SVOC	Fluoranthene	206-44-0	D	16	4	1.20E+00			6.9E+05		1.7E-06
A005	SVOC	2-Methylnaphthalene	91-57-6	ID	16	3	6.40E-01			1.4E+04		4.6E-05
A005	SVOC	Methylphenol (total)	1319-77-3		16	2	3.05E-01			7.0E+05		4.4E-07
A005	SVOC	Naphthalene	91-20-3	C	16	2	7.60E-01			1.2E+04		6.2E-05
A005	SVOC	Phenanthrene	85-01-8	D	16	3	3.35E-01			4.9E+05		6.8E-07
A005	SVOC	Phenol	108-95-2	ID	16	4	7.50E+00			5.8E+06		1.3E-06
A005	SVOC	Pyrene	129-00-0	D	16	6	1.20E+00			5.2E+05		2.3E-06
A005	P/PCB	PCBs (total)	1336-36-3	B2	24	23	1.44E+02		5.6E+02	3.5E+02	2.6E-06	4.1E-01
A005	INORG	Aluminum	7429-90-5	D	16	16	1.77E+04	1.48E+04		2.2E+06		1.3E-03
A005	INORG	Antimony	7440-36-0		16	7	2.80E+00	4.40E-01		1.0E+04		2.3E-04
A005	INORG	Arsenic	7440-38-2	A	16	16	9.60E+00	1.13E+01	9.5E+02	7.0E+03		
A005	INORG	Barium	7440-39-3	D	16	16	1.30E+02	8.38E+01		1.8E+06		2.6E-05
A005	INORG	Beryllium	7440-41-7	B1	16	8	1.10E+00	5.70E-01	1.4E+04	8.2E+03	3.7E-10	6.5E-05
A005	INORG	Cadmium	7440-43-9	B1	16	11	9.10E-01	5.52E-01	1.9E+04	1.8E+04	1.9E-10	2.0E-05
A005	INORG	Chromium (total)	7440-47-3		16	16	1.60E+02	2.82E+01	2.8E+03	7.7E+04	4.6E-07	1.7E-03
A005	INORG	Cobalt	7440-48-4	B1	16	16	3.73E+01	1.00E+01	1.2E+04	9.6E+03	2.2E-08	2.9E-03
A005	INORG	Copper	7440-50-8	D	16	16	4.06E+02	1.89E+01		1.0E+06		3.8E-04
A005	INORG	Cyanide (total)	57-12-5	D	16	1	2.50E-01			5.0E+05		5.0E-07
A005	INORG	Iron	7439-89-6	D	16	16	4.86E+04	2.44E+04		7.7E+06		3.2E-03
A005	INORG	Manganese	7439-96-5	D	16	16	1.64E+03	6.76E+02		2.4E+04		4.0E-02
A005	INORG	Mercury	7439-97-6	D	16	15	7.90E-01	7.05E-02		2.7E+03		2.7E-04
A005	INORG	Nickel	7440-02-0	A	16	16	3.60E+02	1.83E+01	1.4E+05	5.1E+05	2.4E-08	6.7E-04
A005	INORG	Selenium	7782-49-2	D	16	4	8.10E-01	3.96E-01		1.3E+05		3.3E-06
A005	INORG	Silver	7440-22-4	D	16	4	1.80E+00			4.7E+03		3.8E-04
A005	INORG	Thallium	7440-28-0		16	3	6.60E-01	8.40E-01		1.8E+03		
A005	INORG	Vanadium	7440-62-2		16	16	7.75E+01	4.18E+01		1.8E+05		2.0E-04
A005	INORG	Zinc	7440-66-6	D	16	16	1.34E+02	5.48E+01		7.6E+06		1.0E-05
A006	VOC	Acetone	67-64-1	ID	20	1	3.95E-01			2.7E+06		1.5E-07
A006	VOC	Bromomethane	74-83-9	D	20	1	5.00E-01			6.6E+02		7.6E-04
A006	VOC	2-Butanone	78-93-3	ID	20	4	4.00E-01			3.9E+06		1.0E-07
A006	VOC	Chlorobenzene	108-90-7	D	20	4	4.00E+00			2.7E+04		1.5E-04
A006	VOC	Cumene	98-82-8	D	20	2	3.90E-02			4.7E+04		8.4E-07
A006	VOC	1,2-Dichlorobenzene	95-50-1	D	20	5	2.60E+00			2.0E+05		1.3E-05
A006	VOC	1,3-Dichlorobenzene	541-73-1	D	20	6	3.20E+01			2.1E+04		1.5E-03
A006	VOC	1,4-Dichlorobenzene	106-46-7	C	20	6	8.40E+01		9.6E+03	3.9E+05	8.7E-08	2.2E-04
A006	VOC	1,2-Dichloroethane	107-06-2	B2	20	1	5.50E-02		7.7E+02	1.5E+03	7.1E-10	3.7E-05
A006	VOC	Ethyl Benzene	100-41-4	D	20	1	7.00E-02			3.5E+05		2.0E-07
A006	VOC	Methyl Acetate	79-20-9		20	5	2.20E-01			8.1E+06		2.7E-08
A006	VOC	Methylene Chloride	75-09-2	B2	20	4	3.95E-01		2.5E+04	4.1E+05	1.6E-10	9.6E-07
A006	VOC	Toluene	108-88-3	D	20	2	7.30E-01			1.2E+05		6.2E-06
A006	VOC	1,2,4-Trichlorobenzene	120-82-1	D	20	4	7.80E-01			1.8E+05		4.2E-06
A006	VOC	Xylenes (total)	1330-20-7	ID	20	2	3.00E-01			4.5E+04		6.7E-06
A006	SVOC	Acenaphthene	83-32-9		20	2	1.65E+00			8.2E+05		2.0E-06

**Attachment B.7: Estimates of Risk and HQ for Construction Worker Exposure to Soil with Precautions in Place at Certain Locations
at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A006	SVOC	Acenaphthylene	208-96-8	D	20	1	1.55E+00			4.0E+05		3.8E-06
A006	SVOC	Anthracene	120-12-7	D	20	1	1.60E+00			5.4E+06		3.0E-07
A006	SVOC	Benzaldehyde	100-52-7		20	2	5.50E+00			6.1E+05		9.0E-06
A006	SVOC	Benzo(a)anthracene	56-55-3	B2	20	1	1.80E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(a)pyrene	50-32-8	B2	20	1	1.95E+00		1.7E+02		1.1E-07	
A006	SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	1	1.90E+00		1.7E+03		1.1E-08	
A006	SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	1	1.80E+00			5.3E+05		3.4E-06
A006	SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	1	1.70E+00		1.7E+04		1.0E-09	
A006	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	5	4.20E+01		9.5E+04	3.8E+05	4.4E-09	1.1E-04
A006	SVOC	Carbazole	86-74-8	B2	20	1	1.70E+00		6.4E+04		2.7E-10	
A006	SVOC	Chrysene	218-01-9	B2	20	1	1.50E+00		1.7E+05		9.1E-11	
A006	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	1	1.65E+00		1.7E+02		9.7E-08	
A006	SVOC	Dibenzofuran	132-64-9	D	20	1	1.65E+00			7.2E+04		2.3E-05
A006	SVOC	2,4-Dimethylphenol	105-67-9		20	2	1.30E+01			2.9E+05		4.4E-05
A006	SVOC	Di-n-octylphthalate	117-84-0		20	7	6.30E+01			7.7E+05		8.2E-05
A006	SVOC	Fluoranthene	206-44-0	D	20	2	1.80E+00			6.9E+05		2.6E-06
A006	SVOC	Fluorene	86-73-7	D	20	1	1.55E+00			6.3E+05		2.5E-06
A006	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	1	2.30E+00		1.7E+03		1.4E-08	
A006	SVOC	2-Methylnaphthalene	91-57-6	ID	20	1	1.55E+00			1.4E+04		1.1E-04
A006	SVOC	Naphthalene	91-20-3	C	20	1	1.60E+00			1.2E+04		1.3E-04
A006	SVOC	Phenanthrene	85-01-8	D	20	1	1.70E+00			4.9E+05		3.4E-06
A006	SVOC	Pyrene	129-00-0	D	20	1	1.65E+00			5.2E+05		3.2E-06
A006	P/PCB	PCBs (total)	1336-36-3	B2	21	19	2.15E+02		5.6E+02	3.5E+02	3.8E-06	6.1E-01
A006	INORG	Aluminum	7429-90-5	D	20	20	2.00E+04	1.48E+04		2.2E+06		2.3E-03
A006	INORG	Antimony	7440-36-0		17	2	9.40E-01	4.40E-01		1.0E+04		5.0E-05
A006	INORG	Arsenic	7440-38-2	A	20	20	3.70E+01	1.13E+01	9.5E+02	7.0E+03	2.7E-07	3.7E-03
A006	INORG	Barium	7440-39-3	D	20	20	3.74E+02	8.38E+01		1.8E+06		1.6E-04
A006	INORG	Beryllium	7440-41-7	B1	20	16	7.80E+00	5.70E-01	1.4E+04	8.2E+03	5.1E-09	8.8E-04
A006	INORG	Cadmium	7440-43-9	B1	20	15	5.10E+00	5.52E-01	1.9E+04	1.8E+04	2.4E-09	2.5E-04
A006	INORG	Chromium (total)	7440-47-3		20	20	4.91E+01	2.82E+01	2.8E+03	7.7E+04	7.4E-08	2.7E-04
A006	INORG	Cobalt	7440-48-4	B1	20	20	3.07E+02	1.00E+01	1.2E+04	9.6E+03	2.4E-07	3.1E-02
A006	INORG	Copper	7440-50-8	D	20	20	6.33E+02	1.89E+01		1.0E+06		6.1E-04
A006	INORG	Cyanide (total)	57-12-5	D	20	1	3.80E-01			5.0E+05		7.5E-07
A006	INORG	Iron	7439-89-6	D	20	20	3.98E+04	2.44E+04		7.7E+06		2.0E-03
A006	INORG	Manganese	7439-96-5	D	20	20	1.88E+03	6.76E+02		2.4E+04		5.0E-02
A006	INORG	Mercury	7439-97-6	D	20	19	2.40E-01	7.05E-02		2.7E+03		6.3E-05
A006	INORG	Nickel	7440-02-0	A	20	20	1.87E+02	1.83E+01	1.4E+05	5.1E+05	1.2E-08	3.3E-04
A006	INORG	Selenium	7782-49-2	D	20	10	1.60E+00	3.96E-01		1.3E+05		9.6E-06
A006	INORG	Silver	7440-22-4	D	20	2	5.50E-01			4.7E+03		1.2E-04
A006	INORG	Thallium	7440-28-0		20	8	3.70E+00	8.40E-01		1.8E+03		1.6E-03
A006	INORG	Vanadium	7440-62-2		20	20	6.88E+01	4.18E+01		1.8E+05		1.5E-04
A006	INORG	Zinc	7440-66-6	D	20	20	1.09E+03	5.48E+01		7.6E+06		1.4E-04
A009	VOC	Acetone	67-64-1	ID	8	2	4.60E-02			2.7E+06		1.7E-08
A009	VOC	2-Butanone	78-93-3	ID	8	1	1.30E-02			3.9E+06		3.4E-09
A009	VOC	Chlorobenzene	108-90-7	D	8	1	1.70E-02			2.7E+04		6.2E-07
A009	VOC	Cumene	98-82-8	D	8	1	8.25E-04			4.7E+04		1.8E-08
A009	VOC	1,2-Dichlorobenzene	95-50-1	D	8	1	6.65E-03			2.0E+05		3.3E-08
A009	VOC	1,3-Dichlorobenzene	541-73-1	D	8	1	1.75E-02			2.1E+04		8.3E-07
A009	VOC	1,4-Dichlorobenzene	106-46-7	C	8	2	7.65E-02		9.6E+03	3.9E+05	7.9E-11	2.0E-07
A009	VOC	4-Methyl-2-pentanone	108-10-1	ID	8	1	1.60E-03			2.8E+06		5.6E-10
A009	VOC	Methylene Chloride	75-09-2	B2	8	1	3.00E-03		2.5E+04	4.1E+05	1.2E-12	7.3E-09
A009	VOC	Toluene	108-88-3	D	8	1	4.50E-04			1.2E+05		3.8E-09
A009	SVOC	Anthracene	120-12-7	D	8	2	1.10E-01			5.4E+06		2.1E-08
A009	SVOC	Benzo(a)anthracene	56-55-3	B2	8	3	3.30E-01		1.7E+03		2.0E-09	
A009	SVOC	Benzo(a)pyrene	50-32-8	B2	8	3	3.10E-01		1.7E+02		1.8E-08	
A009	SVOC	Benzo(b)fluoranthene	205-99-2	B2	8	4	4.50E-01		1.7E+03		2.7E-09	
A009	SVOC	Benzo(g,h,i)perylene	191-24-2	D	8	3	1.70E-01			5.3E+05		3.2E-07
A009	SVOC	Benzo(k)fluoranthene	207-08-9	B2	8	2	1.50E-01		1.7E+04		8.9E-11	
A009	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	1	5.85E-01		9.5E+04	3.8E+05	6.2E-11	1.5E-06
A009	SVOC	Carbazole	86-74-8	B2	8	1	6.30E-02		6.4E+04		9.8E-12	
A009	SVOC	Chrysene	218-01-9	B2	8	4	3.80E-01		1.7E+05		2.3E-11	
A009	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	8	1	4.00E-02		1.7E+02		2.4E-09	
A009	SVOC	Dibenzofuran	132-64-9	D	8	1	7.30E-02			7.2E+04		1.0E-06
A009	SVOC	Di-n-octylphthalate	117-84-0		8	1	9.30E-01			7.7E+05		1.2E-06
A009	SVOC	Fluoranthene	206-44-0	D	8	4	7.60E-01			6.9E+05		1.1E-06
A009	SVOC	Fluorene	86-73-7	D	8	1	1.90E-01			6.3E+05		3.0E-07
A009	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	8	2	1.70E-01		1.7E+03		1.0E-09	
A009	SVOC	Methylphenol (total)	1319-77-3		8	1	2.64E-01			7.0E+05		3.8E-07
A009	SVOC	Phenanthrene	85-01-8	D	8	3	6.60E-01			4.9E+05		1.3E-06
A009	SVOC	Phenol	108-95-2	ID	8	2	3.70E+00			5.8E+06		6.4E-07
A009	SVOC	Pyrene	129-00-0	D	8	4	6.40E-01			5.2E+05		1.2E-06
A009	P/PCB	PCBs (total)	1336-36-3	B2	8	8	8.94E+01		5.6E+02	3.5E+02	1.6E-06	2.6E-01

**Attachment B.7: Estimates of Risk and HQ for Construction Worker Exposure to Soil with Precautions in Place at Certain Locations
at the Facility
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Soil Exposure Conc ⁴ (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
A009	INORG	Aluminum	7429-90-5	D	8	8	1.26E+04	1.48E+04		2.2E+06		
A009	INORG	Antimony	7440-36-0		5	1	4.20E-01	4.40E-01		1.0E+04		
A009	INORG	Arsenic	7440-38-2	A	8	8	8.40E+00	1.13E+01	9.5E+02	7.0E+03		
A009	INORG	Barium	7440-39-3	D	8	8	1.56E+02	8.38E+01		1.8E+06		4.0E-05
A009	INORG	Beryllium	7440-41-7	B1	8	4	5.50E-01	5.70E-01	1.4E+04	8.2E+03		
A009	INORG	Cadmium	7440-43-9	B1	8	7	3.80E-01	5.52E-01	1.9E+04	1.8E+04		
A009	INORG	Chromium (total)	7440-47-3		8	8	2.60E+01	2.82E+01	2.8E+03	7.7E+04		
A009	INORG	Cobalt	7440-48-4	B1	8	8	5.40E+00	1.00E+01	1.2E+04	9.6E+03		
A009	INORG	Copper	7440-50-8	D	8	8	2.20E+02	1.89E+01		1.0E+06		2.0E-04
A009	INORG	Cyanide (total)	57-12-5	D	8	1	2.00E-01			5.0E+05		4.0E-07
A009	INORG	Iron	7439-89-6	D	8	8	3.74E+04	2.44E+04		7.7E+06		1.7E-03
A009	INORG	Manganese	7439-96-5	D	8	8	1.83E+02	6.76E+02		2.4E+04		
A009	INORG	Mercury	7439-97-6	D	8	7	9.20E-02	7.05E-02		2.7E+03		8.0E-06
A009	INORG	Nickel	7440-02-0	A	8	8	1.46E+01	1.83E+01	1.4E+05	5.1E+05		
A009	INORG	Selenium	7782-49-2	D	8	2	7.65E-01	3.96E-01		1.3E+05		2.9E-06
A009	INORG	Thallium	7440-28-0		8	4	1.00E+00	8.40E-01		1.8E+03		9.1E-05
A009	INORG	Vanadium	7440-62-2		8	8	4.55E+01	4.18E+01		1.8E+05		2.1E-05
A009	INORG	Zinc	7440-66-6	D	8	8	5.66E+01	5.48E+01		7.6E+06		2.4E-07
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												
4. All concentrations are the maximum detected in an area, except concentrations in bold are 95% UCLs.												
5. The risk estimates are based on the controls in place at the locations identified in Table 4-6 of the CA 725 Report.												

Attachment B.7: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration (Construction Worker Scenario)
Bedford, Indiana

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
VOC	Acetone	67-64-1	5.75E-01	3.45E-03	7.95E-04	1.24E-01	1.01E-02	1.14E-05	1.11E-07	5.24E-05	6.94E-06	5.81E+01	2.30E+02	7.38E+02	1.00E+06	1.03E+05
VOC	Benzene	71-43-2	5.89E+01	3.53E-01	1.14E-01	8.80E-02	7.17E-03	9.80E-06	9.50E-08	1.14E-03	3.24E-05	7.81E+01	9.50E+01	4.10E+02	1.75E+03	8.30E+02
VOC	Bromodichloromethane	75-27-4	5.50E+01	3.30E-01	3.28E-02	2.98E-02	2.43E-03	1.06E-05	1.03E-07	1.21E-04	1.06E-05	1.64E+02	5.00E+01	4.63E+02	6.74E+03	2.94E+03
VOC	Bromomethane	74-83-9	1.05E+01	6.30E-02	1.28E-01	7.28E-02	5.93E-03	1.21E-05	1.17E-07	2.70E-03	4.98E-05	9.49E+01	1.62E+03	8.48E+03	1.52E+04	2.83E+03
VOC	2-Butanone	78-93-3	5.20E+00	3.12E-02	1.14E-03	9.49E-02	7.72E-03	9.80E-06	9.50E-08	4.52E-05	6.45E-06	7.21E+01	9.53E+01	3.80E+02	2.40E+05	3.14E+04
VOC	Carbon Disulfide	75-15-0	4.57E+01	2.74E-01	6.20E-01	1.04E-01	8.47E-03	1.00E-05	9.70E-08	7.09E-03	8.08E-05	7.61E+01	3.59E+02	1.51E+03	1.19E+03	5.83E+02
VOC	Chlorobenzene	108-90-7	2.19E+02	1.31E+00	7.60E-02	7.30E-02	5.94E-03	8.70E-06	8.44E-08	2.10E-04	1.39E-05	1.13E+02	1.20E+01	7.44E+01	4.72E+02	6.74E+02
VOC	Chloroethane	75-00-3	1.49E+01	8.94E-02	1.80E-01	1.10E-01	8.96E-03	1.53E-05	1.48E-07	4.80E-03	6.65E-05	6.45E+01	1.01E+03	3.59E+03	5.68E+03	1.26E+03
VOC	Chloroform	67-66-3	3.98E+01	2.39E-01	7.50E-02	1.04E-01	8.47E-03	1.00E-05	9.70E-08	1.19E-03	3.32E-05	1.19E+02	1.97E+02	1.30E+03	7.92E+03	2.79E+03
VOC	Chloromethane	74-87-3	7.80E+00	4.68E-02	1.80E-01	1.26E-01	1.03E-02	6.50E-06	6.30E-08	6.80E-03	7.92E-05	5.05E+01	4.30E+03	1.20E+04	5.33E+03	9.58E+02
VOC	Cumene	98-82-8	3.30E+03	1.98E+01	2.37E+01	6.50E-02	5.29E-03	7.83E-06	7.59E-08	3.41E-03	5.60E-05	1.20E+02	4.50E+00	2.99E+01	6.13E+01	1.23E+03
VOC	Cyclohexane	110-82-7	6.35E+02	3.81E+00	3.98E+00	1.10E-01	8.96E-03	9.14E-06	8.86E-08	5.07E-03	6.84E-05	8.42E+01	9.69E+01	4.50E+02	5.50E+01	2.66E+02
VOC	Dibromochloromethane	124-48-1	6.31E+01	3.79E-01	1.61E-02	1.96E-02	1.60E-03	1.05E-05	1.02E-07	3.54E-05	5.71E-06	2.08E+02	4.90E+00	5.64E+01	2.60E+03	1.25E+03
VOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	3.70E+00	3.90E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	3.81E-05	5.92E-06	1.47E+02	1.36E+00	1.10E+01	1.56E+02	5.94E+02
VOC	1,3-Dichlorobenzene	541-73-1	1.70E+03	1.02E+01	6.33E-02	4.14E-02	3.37E-03	8.85E-06	8.58E-08	1.37E-05	3.55E-06	1.47E+02	2.15E+00	1.75E+01	1.33E+02	1.37E+03
VOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	3.70E+00	4.98E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	4.86E-05	6.69E-06	1.47E+02	1.00E+00	8.12E+00	7.82E+01	2.81E+02
VOC	Dichlorodifluoromethane	75-71-8	1.30E+02	7.80E-01	7.01E+00	8.00E-02	6.51E-03	8.00E-06	7.76E-08	1.38E-02	1.13E-04	1.21E+02	4.85E+03	3.24E+04	2.80E+02	6.15E+02
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	1.90E-01	1.15E-01	7.42E-02	6.04E-03	1.05E-05	1.02E-07	1.48E-03	3.69E-05	9.90E+01	2.27E+02	1.24E+03	5.06E+03	1.57E+03
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.04E-01	2.01E-02	1.04E-01	8.47E-03	9.90E-06	9.60E-08	5.42E-04	2.23E-05	9.90E+01	7.89E+01	4.31E+02	8.52E+03	1.77E+03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.13E-01	8.35E-02	7.36E-02	5.99E-03	1.13E-05	1.10E-07	1.01E-03	3.05E-05	9.69E+01	2.03E+02	1.09E+03	3.50E+03	1.15E+03
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	3.15E-01	1.93E-01	7.07E-02	5.76E-03	1.19E-05	1.15E-07	1.63E-03	3.87E-05	9.69E+01	3.33E+02	1.78E+03	6.30E+03	2.84E+03
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.18E+00	1.62E-01	7.50E-02	6.11E-03	7.80E-06	7.56E-08	2.83E-04	1.61E-05	1.06E+02	9.60E+00	5.63E+01	1.69E+02	3.90E+02
VOC	2-Hexanone	591-78-6	1.48E+01	8.90E-02	1.35E-02	1.10E-02	1.03E-05	9.99E-08	1.33E-03	3.50E-05	1.00E+02	1.16E+01	6.43E+01	1.75E+04	3.31E+03	
VOC	Methyl Acetate	79-20-9	1.66E+00	9.98E-03	5.75E-05	1.23E-01	9.99E-03	1.10E-05	1.07E-07	4.13E-06	1.95E-06	7.41E+01	2.16E+02	8.85E+02	2.44E+05	2.66E+04
VOC	Methyl tert-butyl ether	1634-04-4	1.15E+01	6.89E-02	1.20E-02	8.59E-02	7.00E-03	1.01E-05	9.80E-08	3.26E-04	1.73E-05	8.82E+01	2.50E+02	1.22E+03	5.10E+04	8.70E+03
VOC	4-Methyl-2-pentanone	108-10-1	1.90E+01	1.14E-01	2.82E-03	7.50E-02	6.11E-03	7.80E-06	7.56E-08	5.36E-05	7.02E-06	1.00E+02	1.99E+01	1.10E+02	1.90E+04	4.06E+03
VOC	Methylcyclohexane	108-87-2	8.65E+02	5.19E+00	8.79E+00	9.86E-02	8.03E-03	8.52E-06	8.26E-08	6.73E-03	7.87E-05	9.82E+01	4.60E+01	2.50E+02	1.40E+01	9.72E+01
VOC	Methylene Chloride	75-09-2	1.17E+01	7.02E-02	4.49E-02	1.01E-01	8.22E-03	1.17E-05	1.13E-07	1.37E-03	3.56E-05	8.49E+01	4.33E+02	2.03E+03	1.30E+04	2.31E+03
VOC	Tetrachloroethene	127-18-4	1.55E+02	9.30E-01	3.77E-01	7.20E-02	5.86E-03	8.20E-06	7.95E-08	1.33E-03	3.50E-05	1.66E+02	1.86E+01	1.70E+02	2.00E+02	2.20E+02
VOC	Toluene	108-88-3	1.82E+02	1.09E+00	1.36E-01	8.70E-02	7.08E-03	8.60E-06	8.34E-08	5.24E-04	2.20E-05	9.21E+01	2.84E+01	1.45E+02	5.26E+02	6.40E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.07E+01	2.91E-02	3.00E-02	2.44E-03	8.23E-06	7.98E-08	4.37E-06	2.01E-06	1.81E+02	4.31E-01	4.32E+00	3.00E+02	3.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	6.60E-01	3.53E-01	7.80E-02	6.35E-03	8.80E-06	8.53E-08	1.80E-03	4.07E-05	1.33E+02	1.24E+02	9.12E+02	1.33E+03	1.10E+03
VOC	Trichloroethene	79-01-6	1.66E+02	9.96E-01	2.11E-01	7.90E-02	6.43E-03	9.10E-06	8.83E-08	7.92E-04	2.70E-05	1.31E+02	7.35E+01	5.33E+02	1.10E+03	1.25E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.30E+03	7.80E+00	9.83E+00	7.80E-02	6.35E-03	8.20E-06	7.95E-08	4.24E-03	6.25E-05	1.87E+02	3.32E+02	3.32E+03	1.70E+02	1.66E+03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.12E-01	5.55E-01	1.06E-01	8.63E-03	1.23E-05	1.19E-07	1.01E-02	9.63E-05	6.25E+01	2.98E+03	1.03E+04	2.76E+03	8.70E+02
VOC	Xylenes (total)	1330-20-7	3.86E+02	2.32E+00	1.38E-01	7.80E-02	6.35E-03	8.75E-06	8.48E-08	2.37E-04	1.48E-05	1.06E+02	7.99E+00	4.69E+01	1.75E+02	4.27E+02
SVOC	Acenaphthene	83-32-9	7.08E+03	4.25E+01	3.18E-03	4.21E-02	3.43E-03	7.69E-06	7.46E-08	1.71E-07	3.96E-07	1.54E+02	2.50E-03	2.13E-02	4.24E+00	1.81E+02
SVOC	Acenaphthylene	208-96-8	4.90E+03	2.94E+01	2.31E-03	4.42E-02	3.60E-03	7.44E-06	7.22E-08	1.88E-07	4.16E-07	1.52E+02	9.12E-04	7.67E-03	1.61E+01	4.75E+02
SVOC	Acetophenone	98-86-2	4.10E+01	2.46E-01	2.19E-04	8.00E-02	6.51E-03	8.00E-06	7.76E-08	2.88E-06	1.63E-06	1.20E+02	3.97E-01	2.64E+00	6.13E+03	2.12E+03
SVOC	Anthracene	120-12-7	2.95E+04	1.77E+02	1.34E-03	3.24E-02	2.64E-03	7.74E-06	7.51E-08	1.34E-08	1.11E-07	1.78E+02	2.67E-06	2.63E-05	4.34E-02	7.69E+00
SVOC	Benzaldehyde	100-52-7	2.85E+01	1.71E-01	4.86E-04	7.21E-02	5.87E-03	9.07E-06	8.80E-08	7.20E-06	2.58E-06	1.06E+02	9.00E-01	5.28E+00	3.00E+03	8.12E+02
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	2.39E+03	6.85E-05	5.10E-02	4.15E-03	9.00E-06	8.73E-08	1.03E-10	9.74E-09	2.28E+02	1.05E-07	1.32E-06	9.40E-03	2.24E+01
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	6.12E+03	2.32E-05	4.30E-02	3.50E-03	9.00E-06	8.73E-08	1.82E-11	4.10E-09	2.52E+02	5.49E-09	7.65E-08	1.62E-03	9.91E+00
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	7.38E+03	2.28E-03	2.26E-02	1.84E-03	5.56E-06	5.39E-08	3.80E-10	1.87E-08	2.52E+02	5.00E-07	6.97E-06	1.50E-03	1.11E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	1.60E+06	9.60E+03	2.88E-06	2.03E-02	1.65E-03	5.20E-06	5.04E-08	3.81E-12	1.87E-09	2.76E+02	1.01E-10	1.54E-09	2.60E-04	2.50E+00
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	7.38E+03	1.70E-05	2.26E-02	1.84E-03	5.56E-06	5.39E-08	7.64E-12	2.65E-09	2.52E+02	2.00E-09	2.79E-08	8.00E-04	5.90E+00
SVOC	Biphenyl	92-52-4	1.05E+04	6.29E+01	6.13E-03	4.04E-02	3.29E-03	8.15E-06	7.90E-08	2.13E-07	4.43E-07	1.54E+02	9.64E-03	8.21E-02	6.03E+00	3.80E+02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	9.06E+04	2.09E-06	3.51E-02	2.86E-03	3.66E-06	3.55E-08	3.03E-13	5.28E-10	3.91E+02	6.45E-06	1.39E-04	3.40E-01	3.08E+04
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	3.45E+02	2.59E-05	1.74E-02	1.42E-03	4.83E-06	4.68E-08	1.60E-10	1.21E-08	3.12E+02	8.25E-06	1.42E-04	2.69E+00	9.28E+02
SVOC	Caprolactam	105-60-2	6.51E-01	3.91E-03	5.17E-07	6.54E-02	5.33E-03	8.99E-06	8.72E-08	5.77E-07	7.29E-07	1.13E+02	1.60E-03	1.00E-02	7.72E+05	7.97E+04
SVOC	Carbazole	86-74-8	3.39E+03	2.03E+01	3.13E-07	3.90E-02	3.18E-03	7.03E-06	6.82E-08	2.24E-09	4.54E-08	1.67E+02	5.19E-07	4.79E-06	7.48E+00	1.53E+02
SVOC	4-Chloroaniline	106-47-8	6.61E+01	3.97E-01	6.80E-06	4.83E-02	3.93E-03	1.01E-05	9.80E-08	1.66E-07	3.92E-07	1.28E+02	1.23E-02	8.67E-02	5.30E+03	2.63E+03
SVOC	Chrysene	218-01-9	3.98E+05	2.39E+03	1.94E-03	2.48E-02	2.02E-03	6.21E-06	6.02E-08	1.10E-09	3.19E-08	2.28E+02	6.23E-09	7.86E-08	1.60E-03	3.82E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	3.80E+06	2.28E+04	3.02E-07	2.02E-02	1.64E-03	5.18E-06	5.02E-08	1.47E-12	1.16E-09	2.78E+02	1.00E-10	1.54E-09	2.49E-03	5.68E+01
SVOC	Dibenzofuran	132-64-9	1.12E+04	6.74E+01	2.57E-04	2.70E-02	2.20E-03	5.93E-06	5.75E-08	6.12E-09	7.51E-08	1.68E+02	1.80E-04	1.67E-03	1.00E+01	6.75E+02

Attachment B.7: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration (Construction Worker Scenario)
Bedford, Indiana

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
SVOC	Diethylphthalate	84-66-2	2.88E+02	1.73E+00	9.25E-06	2.56E-02	2.08E-03	6.35E-06	6.16E-08	2.93E-08	1.64E-07	2.22E+02	1.65E-03	2.03E-02	1.08E+03	1.97E+03
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.25E+00	4.10E-05	5.84E-02	4.76E-03	8.69E-06	8.43E-08	1.37E-07	3.55E-07	1.22E+02	9.80E-02	6.62E-01	7.87E+03	1.07E+04
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.03E+02	1.93E-08	4.38E-02	3.57E-03	7.86E-06	7.62E-08	2.48E-10	1.51E-08	2.78E+02	7.30E-05	1.12E-03	1.12E+01	2.28E+03
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	4.15E-01	1.53E-05	3.27E-02	2.66E-03	7.26E-06	7.04E-08	1.43E-07	3.63E-07	1.82E+02	5.67E-04	5.71E-03	1.82E+02	9.36E+01
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	4.99E+05	1.37E-03	1.51E-02	1.23E-03	3.58E-06	3.47E-08	2.28E-12	1.45E-09	3.91E+02	2.60E-06	5.61E-05	2.00E-02	9.98E+03
SVOC	Fluoranthene	206-44-0	1.07E+05	6.42E+02	3.30E-04	3.02E-02	2.46E-03	6.35E-06	6.16E-08	9.00E-10	2.88E-08	2.02E+02	7.80E-06	8.72E-05	2.06E-01	1.32E+02
SVOC	Fluorene	86-73-7	1.38E+04	8.28E+01	1.31E-03	3.63E-02	2.96E-03	7.88E-06	7.64E-08	3.14E-08	1.70E-07	1.66E+02	6.33E-04	5.81E-03	1.98E+00	1.64E+02
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	3.30E+02	2.71E-02	5.42E-02	4.41E-03	5.91E-06	5.73E-08	2.40E-07	4.70E-07	2.85E+02	1.80E-05	2.83E-04	6.20E+00	2.05E+03
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	3.22E+02	1.67E-01	5.61E-02	4.57E-03	6.16E-06	5.97E-08	1.57E-06	1.20E-06	2.61E+02	2.21E-01	3.19E+00	3.23E+00	1.04E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.08E+04	3.28E-05	1.90E-02	1.55E-03	5.66E-06	5.49E-08	3.36E-12	1.76E-09	2.76E+02	1.00E-10	1.53E-09	2.20E-05	4.58E-01
SVOC	2-Methylnaphthalene	91-57-6	6.23E+03	3.74E+01	1.06E-02	9.86E-02	8.03E-03	7.75E-06	7.52E-08	1.50E-06	1.18E-06	1.42E+02	5.50E-02	4.32E-01	2.46E+01	9.22E+02
SVOC	Methylphenol (total)	1319-77-3	8.60E+01	5.16E-01	1.77E-05	7.40E-02	6.03E-03	1.00E-05	9.70E-08	2.19E-07	4.49E-07	1.08E+02			2.30E+04	1.42E+04
SVOC	Naphthalene	91-20-3	2.00E+03	1.20E+01	9.90E-03	5.90E-02	4.80E-03	7.50E-06	7.27E-08	2.61E-06	1.55E-06	1.28E+02	8.50E-02	6.02E-01	3.10E+01	3.75E+02
SVOC	Phenanthrene	85-01-8	1.40E+04	8.40E+01	4.76E-04	3.33E-02	2.71E-03	7.47E-06	7.24E-08	1.07E-08	9.94E-08	1.78E+02	1.12E-04	1.10E-03	1.15E+00	9.67E+01
SVOC	Phenol	108-95-2	2.88E+01	1.73E-01	8.15E-06	8.20E-02	6.68E-03	9.10E-06	8.83E-08	3.47E-07	5.65E-07	9.41E+01	2.76E-01	1.44E+00	8.28E+04	2.25E+04
SVOC	Pyrene	129-00-0	1.05E+05	6.30E+02	2.26E-04	2.72E-02	2.21E-03	7.24E-06	7.02E-08	5.99E-10	2.35E-08	2.02E+02	4.59E-06	5.13E-05	1.35E-01	8.51E+01
P/PCB	PCBs (total)	1336-36-3	2.45E+06	1.47E+04	4.09E-02	8.00E-02	6.51E-03	1.00E-05	9.70E-08	1.20E-08	1.05E-07	3.28E+02	7.71E-05	1.40E-03	1.20E-02	1.76E+02
INORG	Aluminum	7429-90-5		1.50E+03								2.70E+01				
INORG	Antimony	7440-36-0		4.50E+01								1.22E+02				
INORG	Arsenic	7440-38-2		2.90E+01								7.49E+01				
INORG	Barium	7440-39-3		4.10E+01								1.37E+02				
INORG	Beryllium	7440-41-7		7.90E+02								9.01E+00				
INORG	Cadmium	7440-43-9		7.50E+01								1.12E+02				
INORG	Chromium (total)	7440-47-3		1.90E+01								5.20E+01				
INORG	Cobalt	7440-48-4		4.50E+01								5.89E+01				
INORG	Copper	7440-50-8		3.50E+01								6.35E+01				
INORG	Cyanide (amenable)	57-12-5A		9.90E+00								2.60E+01				
INORG	Cyanide (total)	57-12-5		9.90E+00								2.60E+01				
INORG	Iron	7439-89-6		2.50E+01								5.58E+01				
INORG	Lead	7439-92-1		9.00E+02								2.07E+02				
INORG	Manganese	7439-96-5		6.50E+01								5.49E+01				
INORG	Mercury	7439-97-6		1.00E+03	1.45E-01	3.07E-02	2.50E-03	6.30E-06	6.11E-08	2.40E-07	4.70E-07	2.01E+02	1.96E-03	2.17E-02	5.60E-02	5.60E+01
INORG	Nickel	7440-02-0		6.50E+01								5.87E+01				
INORG	Selenium	7782-49-2		5.00E+00								7.90E+01				
INORG	Silver	7440-22-4		8.30E+00								1.08E+02				
INORG	Thallium	7440-28-0		7.10E+01								2.04E+02				
INORG	Vanadium	7440-62-2		1.00E+03								5.09E+01				
INORG	Zinc	7440-66-6		6.20E+01								6.54E+01				
Notes:	Soil bulk density	kg/L	ρ _b	1.5E+00												
	Soil particle density	kg/L	ρ _s	2.65E+00												
	Soil porosity	L/L-soil	n	4.30E-01												
	Soil water content	L/L-soil	θ _w	0.15												
	Soil air-filled porosity	L/L-soil	θ _a	0.28												
	Soil organic carbon fraction	unitless	f _{oc}	0.006												
	Averaging period	year	ED	10												
		s	ED	3.15E+08												
	Molar Gas Constant	L-mmHg/mole-°K	R	62.411												
	Temperature	°C	T	10												
		°K	T	290												

Attachment B.7: Air Dispersion Factor 'C/Q' for Inhalation of Vapors and Particulates Bedford, Indiana		
		Construction Worker
Exposure Area (ft ²)	ft ²	15' x 15'
C/Q (Vapor)	kg/m3 per kg/m2-s	10.96
C/Q (Particulate)	kg/m3 per kg/m2-s	NA

**Attachment B.7: Estimated Concentrations in Ambient Air from Soil
(Construction Worker Scenario)
Bedford, Indiana**

Chem Group	Chemical	CASRN	C _{air} Used			
			C _{soil} (mg/kg)	C _{source} (mg/kg)	Vapor	PM ₁₀
					C _{air} (mg/m ³)	C _{air} (mg/m ³)
VOC	Acetone	67-64-1	1.00E+00	1.00E+00	7.61E-05	1.50E-07
VOC	Benzene	71-43-2	1.00E+00	1.00E+00	3.55E-04	1.50E-07
VOC	Bromodichloromethane	75-27-4	1.00E+00	1.00E+00	1.16E-04	1.50E-07
VOC	Bromomethane	74-83-9	1.00E+00	1.00E+00	5.46E-04	1.50E-07
VOC	2-Butanone	78-93-3	1.00E+00	1.00E+00	7.07E-05	1.50E-07
VOC	Carbon Disulfide	75-15-0	1.00E+00	1.00E+00	8.86E-04	1.50E-07
VOC	Chlorobenzene	108-90-7	1.00E+00	1.00E+00	1.52E-04	1.50E-07
VOC	Chloroethane	75-00-3	1.00E+00	1.00E+00	7.29E-04	1.50E-07
VOC	Chloroform	67-66-3	1.00E+00	1.00E+00	3.63E-04	1.50E-07
VOC	Chloromethane	74-87-3	1.00E+00	1.00E+00	8.68E-04	1.50E-07
VOC	Cumene	98-82-8	1.00E+00	1.00E+00	6.14E-04	1.50E-07
VOC	Cyclohexane	110-82-7	1.00E+00	1.00E+00	7.49E-04	1.50E-07
VOC	Dibromochloromethane	124-48-1	1.00E+00	1.00E+00	6.26E-05	1.50E-07
VOC	1,2-Dichlorobenzene	95-50-1	1.00E+00	1.00E+00	6.49E-05	1.50E-07
VOC	1,3-Dichlorobenzene	541-73-1	1.00E+00	1.00E+00	3.90E-05	1.50E-07
VOC	1,4-Dichlorobenzene	106-46-7	1.00E+00	1.00E+00	7.34E-05	1.50E-07
VOC	Dichlorodifluoromethane	75-71-8	1.00E+00	1.00E+00	1.23E-03	1.50E-07
VOC	1,1-Dichloroethane	75-34-3	1.00E+00	1.00E+00	4.05E-04	1.50E-07
VOC	1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	2.45E-04	1.50E-07
VOC	cis-1,2-Dichloroethene	156-59-2	1.00E+00	1.00E+00	3.34E-04	1.50E-07
VOC	trans-1,2-Dichloroethene	156-60-5	1.00E+00	1.00E+00	4.25E-04	1.50E-07
VOC	Ethyl Benzene	100-41-4	1.00E+00	1.00E+00	1.77E-04	1.50E-07
VOC	2-Hexanone	591-78-6	1.00E+00	1.00E+00	3.84E-04	1.50E-07
VOC	Methyl Acetate	79-20-9	1.00E+00	1.00E+00	2.14E-05	1.50E-07
VOC	Methyl tert-butyl ether	1634-04-4	1.00E+00	1.00E+00	1.90E-04	1.50E-07
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+00	1.00E+00	7.70E-05	1.50E-07
VOC	Methylcyclohexane	108-87-2	1.00E+00	1.00E+00	8.63E-04	1.50E-07
VOC	Methylene Chloride	75-09-2	1.00E+00	1.00E+00	3.90E-04	1.50E-07
VOC	Tetrachloroethene	127-18-4	1.00E+00	1.00E+00	3.84E-04	1.50E-07
VOC	Toluene	108-88-3	1.00E+00	1.00E+00	2.41E-04	1.50E-07
VOC	1,2,4-Trichlorobenzene	120-82-1	1.00E+00	1.00E+00	2.20E-05	1.50E-07
VOC	1,1,1-Trichloroethane	71-55-6	1.00E+00	1.00E+00	4.46E-04	1.50E-07
VOC	Trichloroethene	79-01-6	1.00E+00	1.00E+00	2.96E-04	1.50E-07
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.00E+00	1.00E+00	6.85E-04	1.50E-07
VOC	Vinyl Chloride	75-01-4	1.00E+00	1.00E+00	1.06E-03	1.50E-07
VOC	Xylenes (total)	1330-20-7	1.00E+00	1.00E+00	1.62E-04	1.50E-07
SVOC	Acenaphthene	83-32-9	1.00E+00	1.00E+00	4.35E-06	1.50E-07
SVOC	Acenaphthylene	208-96-8	1.00E+00	1.00E+00	4.56E-06	1.50E-07
SVOC	Acetophenone	98-86-2	1.00E+00	1.00E+00	1.78E-05	1.50E-07
SVOC	Anthracene	120-12-7	1.00E+00	1.00E+00	1.22E-06	1.50E-07
SVOC	Benzaldehyde	100-52-7	1.00E+00	1.00E+00	2.82E-05	1.50E-07
SVOC	Benzo(a)anthracene	56-55-3	1.00E+00	1.00E+00	1.07E-07	1.50E-07
SVOC	Benzo(a)pyrene	50-32-8	1.00E+00	1.00E+00	4.49E-08	1.50E-07

**Attachment B.7: Estimated Concentrations in Ambient Air from Soil
(Construction Worker Scenario)
Bedford, Indiana**

Chem Group	Chemical	CASRN	C _{air} Used			
			C _{soil} (mg/kg)	C _{source} (mg/kg)	Vapor	PM ₁₀
					C _{air} (mg/m ³)	C _{air} (mg/m ³)
SVOC	Benzo(b)fluoranthene	205-99-2	1.00E+00	1.00E+00	2.05E-07	1.50E-07
SVOC	Benzo(g,h,i)perylene	191-24-2	1.00E+00	1.00E+00	2.05E-08	1.50E-07
SVOC	Benzo(k)fluoranthene	207-08-9	1.00E+00	1.00E+00	2.91E-08	1.50E-07
SVOC	Biphenyl	92-52-4	1.00E+00	1.00E+00	4.85E-06	1.50E-07
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.00E+00	1.00E+00	5.79E-09	1.50E-07
SVOC	Butylbenzylphthalate	85-68-7	1.00E+00	1.00E+00	1.33E-07	1.50E-07
SVOC	Caprolactam	105-60-2	1.00E+00	1.00E+00	7.99E-06	1.50E-07
SVOC	Carbazole	86-74-8	1.00E+00	1.00E+00	4.98E-07	1.50E-07
SVOC	4-Chloroaniline	106-47-8	1.00E+00	1.00E+00	4.29E-06	1.50E-07
SVOC	Chrysene	218-01-9	1.00E+00	1.00E+00	3.49E-07	1.50E-07
SVOC	Dibenz(a,h)anthracene	53-70-3	1.00E+00	1.00E+00	1.28E-08	1.50E-07
SVOC	Dibenzofuran	132-64-9	1.00E+00	1.00E+00	8.23E-07	1.50E-07
SVOC	Diethylphthalate	84-66-2	1.00E+00	1.00E+00	1.80E-06	1.50E-07
SVOC	2,4-Dimethylphenol	105-67-9	1.00E+00	1.00E+00	3.89E-06	1.50E-07
SVOC	Di-n-butylphthalate	84-74-2	1.00E+00	1.00E+00	1.66E-07	1.50E-07
SVOC	2,6-Dinitrotoluene	606-20-2	1.00E+00	1.00E+00	3.98E-06	1.50E-07
SVOC	Di-n-octylphthalate	117-84-0	1.00E+00	1.00E+00	1.59E-08	1.50E-07
SVOC	Fluoranthene	206-44-0	1.00E+00	1.00E+00	3.16E-07	1.50E-07
SVOC	Fluorene	86-73-7	1.00E+00	1.00E+00	1.86E-06	1.50E-07
SVOC	Hexachlorobenzene	118-74-1	1.00E+00	1.00E+00	5.15E-06	1.50E-07
SVOC	Hexachlorobutadiene	87-68-3	1.00E+00	1.00E+00	1.32E-05	1.50E-07
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.00E+00	4.58E-01	8.83E-09	1.50E-07
SVOC	2-Methylnaphthalene	91-57-6	1.00E+00	1.00E+00	1.29E-05	1.50E-07
SVOC	Methylphenol (total)	1319-77-3	1.00E+00	1.00E+00	4.92E-06	1.50E-07
SVOC	Naphthalene	91-20-3	1.00E+00	1.00E+00	1.70E-05	1.50E-07
SVOC	Phenanthrene	85-01-8	1.00E+00	1.00E+00	1.09E-06	1.50E-07
SVOC	Phenol	108-95-2	1.00E+00	1.00E+00	6.20E-06	1.50E-07
SVOC	Pyrene	129-00-0	1.00E+00	1.00E+00	2.57E-07	1.50E-07
P/PCB	PCBs (total)	1336-36-3	1.00E+00	1.00E+00	1.15E-06	1.50E-07
INORG	Aluminum	7429-90-5	1.00E+00			1.50E-07
INORG	Antimony	7440-36-0	1.00E+00			1.50E-07
INORG	Arsenic	7440-38-2	1.00E+00			1.50E-07
INORG	Barium	7440-39-3	1.00E+00			1.50E-07
INORG	Beryllium	7440-41-7	1.00E+00			1.50E-07
INORG	Cadmium	7440-43-9	1.00E+00			1.50E-07
INORG	Chromium (total)	7440-47-3	1.00E+00			1.50E-07
INORG	Cobalt	7440-48-4	1.00E+00			1.50E-07
INORG	Copper	7440-50-8	1.00E+00			1.50E-07
INORG	Cyanide (amenable)	57-12-5A	1.00E+00			1.50E-07
INORG	Cyanide (total)	57-12-5	1.00E+00			1.50E-07
INORG	Iron	7439-89-6	1.00E+00			1.50E-07
INORG	Lead	7439-92-1	1.00E+00			1.50E-07
INORG	Manganese	7439-96-5	1.00E+00			1.50E-07

**Attachment B.7: Estimated Concentrations in Ambient Air from Soil
(Construction Worker Scenario)
Bedford, Indiana**

			C_{air} Used			
					Vapor	PM₁₀
Chem Group	Chemical	CASRN	C_{soil} (mg/kg)	C_{source} (mg/kg)	C_{air} (mg/m³)	C_{air} (mg/m³)
INORG	Mercury	7439-97-6	1.00E+00	1.00E+00	5.15E-06	1.50E-07
INORG	Nickel	7440-02-0	1.00E+00			1.50E-07
INORG	Selenium	7782-49-2	1.00E+00			1.50E-07
INORG	Silver	7440-22-4	1.00E+00			1.50E-07
INORG	Thallium	7440-28-0	1.00E+00			1.50E-07
INORG	Vanadium	7440-62-2	1.00E+00			1.50E-07
INORG	Zinc	7440-66-6	1.00E+00			1.50E-07
Note:						
C _{source} = Minimum of Soil Concentration and C _{sat}						

**Attachment B.7: Risk Based Cancer Criteria for Construction Worker Exposure to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	5.59E-09							7.61E-05			1.50E-07			
VOC	Benzene	71-43-2	A	1.00E+00	5.59E-09	5.5E-02	3.3E+04			5.5E-02		3.55E-04	7.8E-03	1.8E+03	1.50E-07	7.8E-03	4.4E+06	1.7E+03
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	5.59E-09	6.2E-02	2.9E+04			6.2E-02		1.16E-04	1.8E-02	2.5E+03	1.50E-07	1.8E-02	1.9E+06	2.3E+03
VOC	Bromomethane	74-83-9	D	1.00E+00	5.59E-09							5.46E-04			1.50E-07			
VOC	2-Butanone	78-93-3	ID	1.00E+00	5.59E-09							7.07E-05			1.50E-07			
VOC	Carbon Disulfide	75-15-0		1.00E+00	5.59E-09							8.86E-04			1.50E-07			
VOC	Chlorobenzene	108-90-7	D	1.00E+00	5.59E-09							1.52E-04			1.50E-07			
VOC	Chloroethane	75-00-3		1.00E+00	5.59E-09	2.9E-03	6.2E+05			2.9E-03		7.29E-04			1.50E-07			6.2E+05
VOC	Chloroform	67-66-3	B2	1.00E+00	5.59E-09							3.63E-04	2.3E-02	6.1E+02	1.50E-07	2.3E-02	1.5E+06	6.1E+02
VOC	Chloromethane	74-87-3	D	1.00E+00	5.59E-09							8.68E-04			1.50E-07			
VOC	Cumene	98-82-8	D	1.00E+00	5.59E-09							6.14E-04			1.50E-07			
VOC	Cyclohexane	110-82-7	ID	1.00E+00	5.59E-09							7.49E-04			1.50E-07			
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	5.59E-09	8.4E-02	2.1E+04			8.4E-02		6.26E-05	2.4E-02	3.4E+03	1.50E-07	2.4E-02	1.4E+06	2.9E+03
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	5.59E-09							6.49E-05			1.50E-07			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	5.59E-09							3.90E-05			1.50E-07			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	5.59E-09	2.4E-02	7.5E+04			2.4E-02		7.34E-05	6.3E-03	1.1E+04	1.50E-07	6.3E-03	5.4E+06	9.6E+03
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	5.59E-09							1.23E-03			1.50E-07			
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	5.59E-09							4.05E-04			1.50E-07			
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	5.59E-09	9.1E-02	2.0E+04			9.1E-02		2.45E-04	2.6E-02	8.0E+02	1.50E-07	2.6E-02	1.3E+06	7.7E+02
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	5.59E-09							3.34E-04			1.50E-07			
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	5.59E-09							4.25E-04			1.50E-07			
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	5.59E-09							1.77E-04			1.50E-07			
VOC	2-Hexanone	591-78-6		1.00E+00	5.59E-09							3.84E-04			1.50E-07			
VOC	Methyl Acetate	79-20-9		1.00E+00	5.59E-09							2.14E-05			1.50E-07			
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	5.59E-09	3.3E-03	5.4E+05			3.3E-03		1.90E-04	1.0E-04	2.7E+05	1.50E-07	1.0E-04	3.4E+08	1.8E+05
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	5.59E-09							7.70E-05			1.50E-07			
VOC	Methylcyclohexane	108-87-2		1.00E+00	5.59E-09							8.63E-04			1.50E-07			
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	5.59E-09	7.5E-03	2.4E+05			7.5E-03		3.90E-04	4.7E-04	2.8E+04	1.50E-07	4.7E-04	7.2E+07	2.5E+04
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	5.59E-09	5.2E-02	3.4E+04			5.2E-02		3.84E-04	3.1E-03	4.4E+03	1.50E-07	3.1E-03	1.1E+07	3.9E+03
VOC	Toluene	108-88-3	D	1.00E+00	5.59E-09							2.41E-04			1.50E-07			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	5.59E-09							2.20E-05			1.50E-07			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	5.59E-09							4.46E-04			1.50E-07			
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	5.59E-09	1.1E-02	1.6E+05			1.1E-02		2.96E-04	1.7E-03	1.0E+04	1.50E-07	1.7E-03	2.0E+07	9.6E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	5.59E-09							6.85E-04			1.50E-07			
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	5.59E-09	1.4E+00	1.3E+03			1.4E+00		1.06E-03	8.8E-03	5.5E+02	1.50E-07	8.8E-03	3.9E+06	3.8E+02
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	5.59E-09							1.62E-04			1.50E-07			
SVOC	Acenaphthene	83-32-9		1.00E+00	5.59E-09			1.30E-01	2.40E-09			4.35E-06			1.50E-07			
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			4.56E-06			1.50E-07			
SVOC	Acetophenone	98-86-2	D	1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.78E-05			1.50E-07			
SVOC	Anthracene	120-12-7	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			1.22E-06			1.50E-07			
SVOC	Benzaldehyde	100-52-7		1.00E+00	5.59E-09			1.00E-01	1.85E-09			2.82E-05			1.50E-07			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	5.59E-09	7.3E-01	2.5E+03	1.30E-01	2.40E-09	7.3E-01	5.7E+03	1.07E-07	2.1E-01	2.3E+05	1.50E-07	2.1E-01	1.6E+05	1.7E+03
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	5.59E-09	7.3E+00	2.5E+02	1.30E-01	2.40E-09	7.3E+00	5.7E+02	4.49E-08	8.9E-01	1.3E+05	1.50E-07	8.9E-01	3.8E+04	1.7E+02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	5.59E-09	7.3E-01	2.5E+03	1.30E-01	2.40E-09	7.3E-01	5.7E+03	2.05E-07	2.1E-01	1.2E+05	1.50E-07	2.1E-01	1.6E+05	1.7E+03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			2.05E-08			1.50E-07			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	5.59E-09	7.3E-02	2.5E+04	1.30E-01	2.40E-09	7.3E-02	5.7E+04	2.91E-08	2.1E-02	8.4E+06	1.50E-07	2.1E-02	1.6E+06	1.7E+04
SVOC	Biphenyl	92-52-4	D	1.00E+00	5.59E-09			1.00E-01	1.85E-09			4.85E-06			1.50E-07			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	5.59E-09	1.4E-02	1.3E+05	1.00E-01	1.85E-09	1.4E-02	3.9E+05	5.79E-09	4.0E-03	2.2E+08	1.50E-07	4.0E-03	8.5E+06	9.5E+04
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.33E-07			1.50E-07			
SVOC	Caprolactam	105-60-2		1.00E+00	5.59E-09			1.00E-01	1.85E-09			7.99E-06			1.50E-07			
SVOC	Carbazole	86-74-8	B2	1.00E+00	5.59E-09	2.0E-02	8.9E+04	1.00E-01	1.85E-09	2.0E-02	2.7E+05	4.98E-07	5.7E-03	1.8E+06	1.50E-07	5.7E-03	6.0E+06	6.4E+04

**Attachment B.7: Risk Based Cancer Criteria for Construction Worker Exposure to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	5.59E-09			1.00E-01	1.85E-09			4.29E-06			1.50E-07			
SVOC	Chrysene	218-01-9	B2	1.00E+00	5.59E-09	7.3E-03	2.5E+05	1.30E-01	2.40E-09	7.3E-03	5.7E+05	3.49E-07	2.1E-03	7.0E+06	1.50E-07	2.1E-03	1.6E+07	1.7E+05
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	5.59E-09	7.3E+00	2.5E+02	1.30E-01	2.40E-09	7.3E+00	5.7E+02	1.28E-08	2.1E+00	1.9E+05	1.50E-07	2.1E+00	1.6E+04	1.7E+02
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	5.59E-09			1.00E-01	1.85E-09			8.23E-07			1.50E-07			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.80E-06			1.50E-07			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	5.59E-09			1.00E-01	1.85E-09			3.89E-06			1.50E-07			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.66E-07			1.50E-07			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	5.59E-09	6.8E-01	2.6E+03	1.00E-01	1.85E-09	6.8E-01	8.0E+03	3.98E-06	1.9E-01	6.6E+03	1.50E-07	1.9E-01	1.8E+05	1.5E+03
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.59E-08			1.50E-07			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			3.16E-07			1.50E-07			
SVOC	Fluorene	86-73-7	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			1.86E-06			1.50E-07			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	5.59E-09	1.6E+00	1.1E+03	1.00E-01	1.85E-09	1.6E+00	3.4E+03	5.15E-06	4.6E-01	2.2E+03	1.50E-07	4.6E-01	7.4E+04	6.0E+02
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	5.59E-09	7.8E-02	2.3E+04	1.00E-01	1.85E-09	7.8E-02	6.9E+04	1.32E-05	2.2E-02	1.8E+04	1.50E-07	2.2E-02	1.5E+06	8.7E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	5.59E-09	7.3E-01	2.5E+03	1.30E-01	2.40E-09	7.3E-01	5.7E+03	8.83E-09	2.1E-01	2.8E+06	1.50E-07	2.1E-01	1.6E+05	1.7E+03
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	5.59E-09			1.00E-01	1.85E-09			1.29E-05			1.50E-07			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	5.59E-09			1.00E-01	1.85E-09			4.92E-06			1.50E-07			
SVOC	Naphthalene	91-20-3	C	1.00E+00	5.59E-09			1.30E-01	2.40E-09			1.70E-05			1.50E-07			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			1.09E-06			1.50E-07			
SVOC	Phenol	108-95-2	ID	1.00E+00	5.59E-09			1.00E-01	1.85E-09			6.20E-06			1.50E-07			
SVOC	Pyrene	129-00-0	D	1.00E+00	5.59E-09			1.30E-01	2.40E-09			2.57E-07			1.50E-07			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	5.59E-09	2.0E+00	8.9E+02	1.40E-01	2.58E-09	2.0E+00	1.9E+03	1.15E-06	5.7E-01	7.8E+03	1.50E-07	5.7E-01	6.0E+04	5.6E+02
INORG	Aluminum	7429-90-5	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Antimony	7440-36-0		1.00E+00	5.59E-09										1.50E-07			
INORG	Arsenic	7440-38-2	A	1.00E+00	5.59E-09	1.5E+00	1.2E+03	3.00E-02	5.54E-10	1.5E+00	1.2E+04		4.3E+00		1.50E-07	4.3E+00	7.9E+03	9.5E+02
INORG	Barium	7440-39-3	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Beryllium	7440-41-7	B1	1.00E+00	5.59E-09								2.4E+00		1.50E-07	2.4E+00	1.4E+04	1.4E+04
INORG	Cadmium	7440-43-9	B1	1.00E+00	5.59E-09			1.00E-03	1.85E-11				1.8E+00		1.50E-07	1.8E+00	1.9E+04	1.9E+04
INORG	Chromium (total)	7440-47-3		1.00E+00	5.59E-09								1.2E+01		1.50E-07	1.2E+01	2.8E+03	2.8E+03
INORG	Cobalt	7440-48-4	B1	1.00E+00	5.59E-09								2.8E+00		1.50E-07	2.8E+00	1.2E+04	1.2E+04
INORG	Copper	7440-50-8	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Cyanide (total)	57-12-5	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Iron	7439-89-6	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Lead	7439-92-1	B2	1.00E+00	5.59E-09										1.50E-07			
INORG	Manganese	7439-96-5	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Mercury	7439-97-6	D	1.00E+00	5.59E-09							5.15E-06			1.50E-07			
INORG	Nickel	7440-02-0	A	1.00E+00	5.59E-09								2.4E-01		1.50E-07	2.4E-01	1.4E+05	1.4E+05
INORG	Selenium	7782-49-2	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Silver	7440-22-4	D	1.00E+00	5.59E-09										1.50E-07			
INORG	Thallium	7440-28-0		1.00E+00	5.59E-09										1.50E-07			
INORG	Vanadium	7440-62-2		1.00E+00	5.59E-09										1.50E-07			
INORG	Zinc	7440-66-6	D	1.00E+00	5.59E-09										1.50E-07			

Attachment B.7: Risk Based Noncancer Criteria for Construction Worker Exposure to Soil

Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	3.91E-08	9.0E-01	2.30E+07			9.0E-01		7.61E-05	3.2E+00	3.02E+06	1.50E-07	3.2E+00	1.53E+09	2.67E+06
VOC	Benzene	71-43-2	A	1.00E+00	3.91E-08	4.0E-03	1.02E+05			4.0E-03		3.55E-04	3.0E-02	6.16E+03	1.50E-07	3.0E-02	1.46E+07	5.81E+03
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02		1.16E-04	7.0E-02	4.41E+04	1.50E-07	7.0E-02	3.41E+07	4.06E+04
VOC	Bromomethane	74-83-9	D	1.00E+00	3.91E-08	1.4E-03	3.58E+04			1.4E-03		5.46E-04	5.0E-03	6.68E+02	1.50E-07	5.0E-03	2.43E+06	6.56E+02
VOC	2-Butanone	78-93-3	ID	1.00E+00	3.91E-08	6.0E-01	1.53E+07			6.0E-01		7.07E-05	5.0E+00	5.16E+06	1.50E-07	5.0E+00	2.43E+09	3.86E+06
VOC	Carbon Disulfide	75-15-0		1.00E+00	3.91E-08	1.0E-01	2.56E+06			1.0E-01		8.86E-04	7.0E-01	5.77E+04	1.50E-07	7.0E-01	3.41E+08	5.64E+04
VOC	Chlorobenzene	108-90-7	D	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02		1.52E-04	6.0E-02	2.88E+04	1.50E-07	6.0E-02	2.92E+07	2.72E+04
VOC	Chloroethane	75-00-3		1.00E+00	3.91E-08	4.0E-01	1.02E+07			4.0E-01		7.29E-04	1.0E+01	1.00E+06	1.50E-07	1.0E+01	4.87E+09	9.12E+05
VOC	Chloroform	67-66-3	B2	1.00E+00	3.91E-08	1.0E-02	2.56E+05			1.0E-02		3.63E-04	5.0E-02	1.00E+04	1.50E-07	5.0E-02	2.43E+07	9.66E+03
VOC	Chloromethane	74-87-3	D	1.00E+00	3.91E-08							8.68E-04	9.0E-02	7.57E+03	1.50E-07	9.0E-02	4.38E+07	7.57E+03
VOC	Cumene	98-82-8	D	1.00E+00	3.91E-08	1.0E-01	2.56E+06			1.0E-01		6.14E-04	4.0E-01	4.75E+04	1.50E-07	4.0E-01	1.95E+08	4.67E+04
VOC	Cyclohexane	110-82-7	ID	1.00E+00	3.91E-08							7.49E-04	6.0E+00	5.84E+05	1.50E-07	6.0E+00	2.92E+09	5.84E+05
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02		6.26E-05	7.0E-02	8.16E+04	1.50E-07	7.0E-02	3.41E+07	7.02E+04
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	3.91E-08	9.0E-02	2.30E+06			9.0E-02		6.49E-05	2.0E-01	2.25E+05	1.50E-07	2.0E-01	9.73E+07	2.05E+05
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	3.91E-08	9.0E-04	2.30E+04			9.0E-04		3.90E-05	1.4E-01	2.62E+05	1.50E-07	1.4E-01	6.81E+07	2.11E+04
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	3.91E-08	3.0E-02	7.67E+05			3.0E-02		7.34E-05	8.0E-01	7.96E+05	1.50E-07	8.0E-01	3.89E+08	3.90E+05
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	3.91E-08	2.0E-01	5.11E+06			2.0E-01		1.23E-03	2.0E-01	1.18E+04	1.50E-07	2.0E-01	9.73E+07	1.18E+04
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	3.91E-08	1.0E-01	2.56E+06			1.0E-01		4.05E-04	5.0E-01	9.01E+04	1.50E-07	5.0E-01	2.43E+08	8.70E+04
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	3.91E-08	3.0E-02	7.67E+05			3.0E-02		2.45E-04	5.0E-03	1.49E+03	1.50E-07	5.0E-03	2.43E+06	1.49E+03
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	3.91E-08	1.0E-02	2.56E+05			1.0E-02		3.34E-04	3.5E-02	7.64E+03	1.50E-07	3.5E-02	1.70E+07	7.42E+03
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02		4.25E-04	7.0E-02	1.20E+04	1.50E-07	7.0E-02	3.41E+07	1.18E+04
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	3.91E-08	1.0E-01	2.56E+06			1.0E-01		1.77E-04	1.0E+00	4.13E+05	1.50E-07	1.0E+00	4.87E+08	3.55E+05
VOC	2-Hexanone	591-78-6		1.00E+00	3.91E-08	4.0E-02	1.02E+06			4.0E-02		3.84E-04	5.0E-03	9.51E+02	1.50E-07	5.0E-03	2.43E+06	9.49E+02
VOC	Methyl Acetate	79-20-9		1.00E+00	3.91E-08	1.0E+00	2.56E+07			1.0E+00		2.14E-05	3.5E+00	1.20E+07	1.50E-07	3.5E+00	1.70E+09	8.11E+06
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	3.91E-08							1.90E-04	3.0E+00	1.15E+06	1.50E-07	3.0E+00	1.46E+09	1.15E+06
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	3.91E-08							7.70E-05	3.0E+00	2.84E+06	1.50E-07	3.0E+00	1.46E+09	2.84E+06
VOC	Methylcyclohexane	108-87-2		1.00E+00	3.91E-08							8.63E-04	3.0E+00	2.54E+05	1.50E-07	3.0E+00	1.46E+09	2.54E+05
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	3.91E-08	6.0E-02	1.53E+06			6.0E-02		3.90E-04	3.0E+00	5.62E+05	1.50E-07	3.0E+00	1.46E+09	4.11E+05
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	3.91E-08	1.0E-02	2.56E+05			1.0E-02		3.84E-04	4.0E-01	7.61E+04	1.50E-07	4.0E-01	1.95E+08	5.86E+04
VOC	Toluene	108-88-3	D	1.00E+00	3.91E-08	2.0E-01	5.11E+06			2.0E-01		2.41E-04	4.0E-01	1.21E+05	1.50E-07	4.0E-01	1.95E+08	1.18E+05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	3.91E-08	1.0E-02	2.56E+05			1.0E-02		2.20E-05	2.0E-01	6.64E+05	1.50E-07	2.0E-01	9.73E+07	1.84E+05
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	3.91E-08	2.8E-01	7.15E+06			2.8E-01		4.46E-04	2.2E+00	3.60E+05	1.50E-07	2.2E+00	1.07E+09	3.43E+05
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	3.91E-08	6.0E-03	1.53E+05			6.0E-03		2.96E-04			1.50E-07			1.53E+05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	3.91E-08	3.0E+01	7.67E+08			3.0E+01		6.85E-04	3.0E+01	3.20E+06	1.50E-07	3.0E+01	1.46E+10	3.18E+06
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	3.91E-08	3.0E-03	7.67E+04			3.0E-03		1.06E-03	1.0E-01	6.92E+03	1.50E-07	1.0E-01	4.87E+07	6.35E+03
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	3.91E-08	2.0E-01	5.11E+06			2.0E-01		1.62E-04	1.0E-01	4.50E+04	1.50E-07	1.0E-01	4.87E+07	4.46E+04
SVOC	Acenaphthene	83-32-9		1.00E+00	3.91E-08	6.0E-02	1.53E+06	1.30E-01	1.68E-08	6.0E-02	3.57E+06	4.35E-06	2.1E-01	3.53E+06	1.50E-07	2.1E-01	1.02E+08	8.16E+05
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	3.91E-08	3.0E-02	7.67E+05	1.30E-01	1.68E-08	3.0E-02	1.79E+06	4.56E-06	1.1E-01	1.68E+06	1.50E-07	1.1E-01	5.11E+07	4.03E+05
SVOC	Acetophenone	98-86-2	D	1.00E+00	3.91E-08	1.0E-01	2.56E+06	1.00E-01	1.29E-08	1.0E-01	7.74E+06	1.78E-05	3.5E-01	1.43E+06	1.50E-07	3.5E-01	1.70E+08	8.16E+05
SVOC	Anthracene	120-12-7	D	1.00E+00	3.91E-08	3.0E-01	7.67E+06	1.30E-01	1.68E-08	3.0E-01	1.79E+07	1.22E-06			1.50E-07			5.36E+06
SVOC	Benzaldehyde	100-52-7		1.00E+00	3.91E-08	1.0E-01	2.56E+06	1.00E-01	1.29E-08	1.0E-01	7.74E+06	2.82E-05	3.5E-01	9.05E+05	1.50E-07	3.5E-01	1.70E+08	6.13E+05
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			1.07E-07			1.50E-07			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			4.49E-08			1.50E-07			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			2.05E-07			1.50E-07			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	3.91E-08	3.0E-02	7.67E+05	1.30E-01	1.68E-08	3.0E-02	1.79E+06	2.05E-08	1.1E-01	3.73E+08	1.50E-07	1.1E-01	5.11E+07	5.30E+05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			2.91E-08			1.50E-07			
SVOC	Biphenyl	92-52-4	D	1.00E+00	3.91E-08	5.0E-02	1.28E+06	1.00E-01	1.29E-08	5.0E-02	3.87E+06	4.85E-06	1.8E-01	2.63E+06	1.50E-07	1.8E-01	8.52E+07	6.98E+05
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	3.91E-08	2.0E-02	5.11E+05	1.00E-01	1.29E-08	2.0E-02	1.55E+06	5.79E-09			1.50E-07			3.84E+05
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	3.91E-08	2.0E-01	5.11E+06	1.00E-01	1.29E-08	2.0E-01	1.55E+07	1.33E-07	7.0E-01	3.84E+08	1.50E-07	7.0E-01	3.41E+08	3.76E+06
SVOC	Caprolactam	105-60-2		1.00E+00	3.91E-08	5.0E-01	1.28E+07	1.00E-01	1.29E-08	5.0E-01	3.87E+07	7.99E-06	1.8E+00	1.60E+07	1.50E-07	1.8E+00	8.52E+08	5.96E+06

Attachment B.7: Risk Based Noncancer Criteria for Construction Worker Exposure to Soil

Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
SVOC	Carbazole	86-74-8	B2	1.00E+00	3.91E-08			1.00E-01	1.29E-08			4.98E-07			1.50E-07			
SVOC	4-Chloroaniline	106-47-8		1.00E+00	3.91E-08	4.0E-03	1.02E+05	1.00E-01	1.29E-08	4.0E-03	3.10E+05	4.29E-06	1.4E-02	2.38E+05	1.50E-07	1.4E-02	6.81E+06	5.76E+04
SVOC	Chrysene	218-01-9	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			3.49E-07			1.50E-07			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			1.28E-08			1.50E-07			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	3.91E-08	4.0E-03	1.02E+05	1.00E-01	1.29E-08	4.0E-03	3.10E+05	8.23E-07	1.4E-02	1.24E+06	1.50E-07	1.4E-02	6.81E+06	7.16E+04
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	3.91E-08	8.0E-01	2.04E+07	1.00E-01	1.29E-08	8.0E-01	6.19E+07	1.80E-06	2.8E+00	1.14E+08	1.50E-07	2.8E+00	1.36E+09	1.34E+07
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	3.91E-08	2.0E-02	5.11E+05	1.00E-01	1.29E-08	2.0E-02	1.55E+06	3.89E-06	7.0E-02	1.31E+06	1.50E-07	7.0E-02	3.41E+07	2.95E+05
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	3.91E-08	1.0E-01	2.56E+06	1.00E-01	1.29E-08	1.0E-01	7.74E+06	1.66E-07			1.50E-07			1.92E+06
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	3.91E-08	1.0E-03	2.56E+04	1.00E-01	1.29E-08	1.0E-03	7.74E+04	3.98E-06	3.5E-03	6.42E+04	1.50E-07	3.5E-03	1.70E+06	1.47E+04
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	3.91E-08	4.0E-02	1.02E+06	1.00E-01	1.29E-08	4.0E-02	3.10E+06	1.59E-08			1.50E-07			7.68E+05
SVOC	Fluoranthene	206-44-0	D	1.00E+00	3.91E-08	4.0E-02	1.02E+06	1.30E-01	1.68E-08	4.0E-02	2.38E+06	3.16E-07	1.4E-01	3.24E+07	1.50E-07	1.4E-01	6.81E+07	6.93E+05
SVOC	Fluorene	86-73-7	D	1.00E+00	3.91E-08	4.0E-02	1.02E+06	1.30E-01	1.68E-08	4.0E-02	2.38E+06	1.86E-06	1.4E-01	5.48E+06	1.50E-07	1.4E-01	6.81E+07	6.27E+05
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	3.91E-08	8.0E-04	2.04E+04	1.00E-01	1.29E-08	8.0E-04	6.19E+04	5.15E-06			1.50E-07			1.54E+04
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	3.91E-08	3.0E-04	7.67E+03	1.00E-01	1.29E-08	3.0E-04	2.32E+04	1.32E-05			1.50E-07			5.76E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	3.91E-08			1.30E-01	1.68E-08			8.83E-09			1.50E-07			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	3.91E-08	4.0E-03	1.02E+05	1.00E-01	1.29E-08	4.0E-03	3.10E+05	1.29E-05	3.0E-03	1.70E+04	1.50E-07	3.0E-03	1.46E+06	1.38E+04
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	3.91E-08	5.0E-02	1.28E+06	1.00E-01	1.29E-08	5.0E-02	3.87E+06	4.92E-06	1.8E-01	2.59E+06	1.50E-07	1.8E-01	8.52E+07	6.95E+05
SVOC	Naphthalene	91-20-3	C	1.00E+00	3.91E-08	2.0E-02	5.11E+05	1.30E-01	1.68E-08	2.0E-02	1.19E+06	1.70E-05	3.0E-03	1.29E+04	1.50E-07	3.0E-03	1.46E+06	1.23E+04
SVOC	Phenanthrene	85-01-8	D	1.00E+00	3.91E-08	3.0E-02	7.67E+05	1.30E-01	1.68E-08	3.0E-02	1.79E+06	1.09E-06	1.1E-01	7.03E+06	1.50E-07	1.1E-01	5.11E+07	4.94E+05
SVOC	Phenol	108-95-2	ID	1.00E+00	3.91E-08	3.0E-01	7.67E+06	1.00E-01	1.29E-08	3.0E-01	2.32E+07	6.20E-06			1.50E-07			5.76E+06
SVOC	Pyrene	129-00-0	D	1.00E+00	3.91E-08	3.0E-02	7.67E+05	1.30E-01	1.68E-08	3.0E-02	1.79E+06	2.57E-07	1.1E-01	2.98E+07	1.50E-07	1.1E-01	5.11E+07	5.22E+05
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	3.91E-08	2.0E-05	5.11E+02	1.40E-01	1.81E-08	2.0E-05	1.11E+03	1.15E-06			1.50E-07			3.50E+02
INORG	Aluminum	7429-90-5	D	1.00E+00	3.91E-08	1.0E+00	2.56E+07			1.0E+00			5.0E-03		1.50E-07	5.0E-03	2.43E+06	2.22E+06
INORG	Antimony	7440-36-0		1.00E+00	3.91E-08	4.0E-04	1.02E+04			6.0E-05			1.4E-03		1.50E-07	1.4E-03	6.81E+05	1.01E+04
INORG	Arsenic	7440-38-2	A	1.00E+00	3.91E-08	3.0E-04	7.67E+03	3.00E-02	3.87E-09	3.0E-04	7.74E+04				1.50E-07			6.97E+03
INORG	Barium	7440-39-3	D	1.00E+00	3.91E-08	7.0E-02	1.79E+06			7.0E-02					1.50E-07			1.79E+06
INORG	Beryllium	7440-41-7	B1	1.00E+00	3.91E-08	2.0E-03	5.11E+04			1.4E-05			2.0E-05		1.50E-07	2.0E-05	9.73E+03	8.18E+03
INORG	Cadmium	7440-43-9	B1	1.00E+00	3.91E-08	1.0E-03	2.56E+04	1.00E-03	1.29E-10	2.5E-05	1.94E+05		2.0E-04		1.50E-07	2.0E-04	9.71E+04	1.83E+04
INORG	Chromium (total)	7440-47-3		1.00E+00	3.91E-08	3.0E-03	7.67E+04			7.5E-05					1.50E-07			7.67E+04
INORG	Cobalt	7440-48-4	B1	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02			2.0E-05		1.50E-07	2.0E-05	9.73E+03	9.55E+03
INORG	Copper	7440-50-8	D	1.00E+00	3.91E-08	4.0E-02	1.02E+06			4.0E-02			1.4E-01		1.50E-07	1.4E-01	6.81E+07	1.01E+06
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02			7.0E-02		1.50E-07	7.0E-02	3.41E+07	5.03E+05
INORG	Cyanide (total)	57-12-5	D	1.00E+00	3.91E-08	2.0E-02	5.11E+05			2.0E-02			7.0E-02		1.50E-07	7.0E-02	3.41E+07	5.03E+05
INORG	Iron	7439-89-6	D	1.00E+00	3.91E-08	3.0E-01	7.67E+06			3.0E-01					1.50E-07			7.67E+06
INORG	Lead	7439-92-1	B2	1.00E+00	3.91E-08										1.50E-07			
INORG	Manganese	7439-96-5	D	1.00E+00	3.91E-08	1.4E-01	3.58E+06			5.6E-03			5.0E-05		1.50E-07	5.0E-05	2.43E+04	2.42E+04
INORG	Mercury	7439-97-6	D	1.00E+00	3.91E-08	3.0E-04	7.67E+03			2.1E-05		5.15E-06	3.0E-04	4.25E+03	1.50E-07	3.0E-04	1.46E+05	2.68E+03
INORG	Nickel	7440-02-0	A	1.00E+00	3.91E-08	2.0E-02	5.11E+05			8.0E-04					1.50E-07			5.11E+05
INORG	Selenium	7782-49-2	D	1.00E+00	3.91E-08	5.0E-03	1.28E+05			5.0E-03			1.8E-02		1.50E-07	1.8E-02	8.52E+06	1.26E+05
INORG	Silver	7440-22-4	D	1.00E+00	3.91E-08	5.0E-03	1.28E+05			2.0E-04			1.0E-05		1.50E-07	1.0E-05	4.87E+03	4.69E+03
INORG	Thallium	7440-28-0		1.00E+00	3.91E-08	7.0E-05	1.79E+05			7.0E-05			2.5E-04		1.50E-07	2.5E-04	1.19E+05	1.76E+03
INORG	Vanadium	7440-62-2		1.00E+00	3.91E-08	7.0E-03	1.79E+05			1.8E-04			2.5E-02		1.50E-07	2.5E-02	1.19E+07	1.76E+05
INORG	Zinc	7440-66-6	D	1.00E+00	3.91E-08	3.0E-01	7.67E+06			3.0E-01			1.1E+00		1.50E-07	1.1E+00	5.11E+08	7.55E+06

A T T A C H M E N T B . 8

Exposure of Construction Workers to On-Site Shallow Groundwater and Spring Water

**Attachment B.8: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to On-Site Groundwater
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Wellzone	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Groundwater Conc (mg/L)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Construction Worker Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
A011	Shallow_Bedrock	SVOC	Caprolactam	105-60-2		1	1	9.20E-02		1.9E+05		4.7E-07
A011	Shallow_Bedrock	SVOC	Phenol	108-95-2	ID	1	1	9.00E-03		3.1E+04		2.9E-07
A011	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	B2	1	1	7.86E-04	1.5E-02	9.4E-03	5.4E-07	8.4E-02
A011	Shallow_Bedrock	INORG	Barium	7440-39-3	D	1	1	6.60E-02		2.2E+04		3.1E-06
A011	Shallow_Bedrock	INORG	Iron	7439-89-6	D	1	1	1.63E+01		9.2E+04		1.8E-04
A011	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	1	1	2.00E-01		4.1E+03		4.9E-05
Monitoring_Well	Overburden	INORG	Aluminum	7429-90-5	D	3	1	2.40E-01		3.1E+05		7.8E-07
Monitoring_Well	Overburden	INORG	Arsenic	7440-38-2	A	3	1	5.20E-03	1.4E+01	9.2E+01	3.6E-09	5.6E-05
Monitoring_Well	Overburden	INORG	Barium	7440-39-3	D	3	3	2.10E-01		2.2E+04		9.7E-06
Monitoring_Well	Overburden	INORG	Cadmium	7440-43-9	B1	3	1	7.00E-04		1.8E+01		3.9E-05
Monitoring_Well	Overburden	INORG	Chromium (total)	7440-47-3		3	1	6.90E-03		5.6E+01		1.2E-04
Monitoring_Well	Overburden	INORG	Cobalt	7440-48-4	B1	3	3	1.80E-01		8.1E+03		2.2E-05
Monitoring_Well	Overburden	INORG	Copper	7440-50-8	D	3	1	3.50E-02		1.2E+04		2.8E-06
Monitoring_Well	Overburden	INORG	Iron	7439-89-6	D	3	2	3.30E+00		9.2E+04		3.6E-05
Monitoring_Well	Overburden	INORG	Manganese	7439-96-5	D	3	3	2.20E+00		4.1E+03		5.4E-04
Monitoring_Well	Overburden	INORG	Mercury	7439-97-6	D	3	1	1.50E-04		2.6E-01		5.8E-04
Monitoring_Well	Overburden	INORG	Nickel	7440-02-0	A	3	3	1.40E-01		2.4E+03		5.9E-05
Monitoring_Well	Overburden	INORG	Zinc	7440-66-6	D	3	2	6.60E-02		1.1E+05		6.0E-07
Monitoring_Well	Overburden	VOC	2-Butanone	78-93-3	ID	3	1	7.30E-04		8.0E+03		9.1E-08
Monitoring_Well	Shallow_Bedrock	INORG	Arsenic	7440-38-2	A	8	3	1.30E-02	1.4E+01	9.2E+01	9.0E-09	1.4E-04
Monitoring_Well	Shallow_Bedrock	INORG	Barium	7440-39-3	D	8	7	1.90E-01		2.2E+04		8.8E-06
Monitoring_Well	Shallow_Bedrock	INORG	Cadmium	7440-43-9	B1	8	1	5.70E-04		1.8E+01		3.2E-05
Monitoring_Well	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3		8	3	2.80E-01		5.6E+01		5.0E-03
Monitoring_Well	Shallow_Bedrock	INORG	Cobalt	7440-48-4	B1	8	4	1.00E-02		8.1E+03		1.2E-06
Monitoring_Well	Shallow_Bedrock	INORG	Iron	7439-89-6	D	8	8	1.70E+01		9.2E+04		1.8E-04
Monitoring_Well	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	8	8	2.40E+00		4.1E+03		5.9E-04
Monitoring_Well	Shallow_Bedrock	INORG	Nickel	7440-02-0	A	8	6	3.30E-02		2.4E+03		1.4E-05
Monitoring_Well	Shallow_Bedrock	INORG	Thallium	7440-28-0		8	1	2.00E-03		2.2E+01		9.3E-05
Monitoring_Well	Shallow_Bedrock	INORG	Thallium	7440-28-0		8	1	2.20E-03		2.2E+01		1.0E-04
Monitoring_Well	Shallow_Bedrock	INORG	Vanadium	7440-62-2		8	1	9.90E-04		1.4E+02		7.3E-06
Monitoring_Well	Shallow_Bedrock	INORG	Zinc	7440-66-6	D	8	4	3.20E-02		1.1E+05		2.9E-07
Monitoring_Well	Shallow_Bedrock	P/PCB	PCBs (total)	1336-36-3	B2	11	1	4.73E-04	1.5E-02	9.4E-03	3.2E-07	5.1E-02
Monitoring_Well	Shallow_Bedrock	SVOC	Diethylphthalate	84-66-2	D	8	1	1.60E-03		4.7E+04		3.4E-08
Monitoring_Well	Shallow_Bedrock	SVOC	Di-n-butylphthalate	84-74-2	D	8	1	9.00E-04		4.6E+02		1.9E-06
Monitoring_Well	Shallow_Bedrock	VOC	2-Butanone	78-93-3	ID	8	3	8.00E-02		8.0E+03		1.0E-05
Monitoring_Well	Shallow_Bedrock	VOC	Carbon Disulfide	75-15-0		8	1	7.70E-04		3.5E+02		2.2E-06
Monitoring_Well	Shallow_Bedrock	VOC	cis-1,2-Dichloroethene	156-59-2	D	8	1	2.00E-03		2.1E+01		9.5E-05
Monitoring_Well	Shallow_Bedrock	VOC	Toluene	108-88-3	D	8	5	8.40E-03		2.2E+02		3.7E-05
Monitoring_Well	Shallow_Bedrock	VOC	Vinyl Chloride	75-01-4	A	8	1	8.40E-03	1.9E+00	4.0E+01	4.3E-08	2.1E-04
P205(GM)	Shallow_Bedrock	VOC	2-Butanone	78-93-3	ID	1	1	8.00E-02		8.0E+03		1.0E-05
P205(GM)	Shallow_Bedrock	VOC	Carbon Disulfide	75-15-0		1	1	7.70E-04		3.5E+02		2.2E-06
P205(GM)	Shallow_Bedrock	VOC	Toluene	108-88-3	D	1	1	1.10E-03		2.2E+02		4.9E-06
P205(GM)	Shallow_Bedrock	INORG	Arsenic	7440-38-2	A	1	1	3.80E-03	1.4E+01	9.2E+01	2.6E-09	4.1E-05
P205(GM)	Shallow_Bedrock	INORG	Barium	7440-39-3	D	1	1	7.20E-02		2.2E+04		3.3E-06
P205(GM)	Shallow_Bedrock	INORG	Chromium (total)	7440-47-3		1	1	2.80E-01		5.6E+01		5.0E-03
P205(GM)	Shallow_Bedrock	INORG	Iron	7439-89-6	D	1	1	2.80E-01		9.2E+04		3.0E-06
P205(GM)	Shallow_Bedrock	INORG	Manganese	7439-96-5	D	1	1	8.00E-03		4.1E+03		2.0E-06
Note:												
1. Only constituents detected at each area are shown.												
2. Carc class - EPA Weight-of-Evidence Cancer Classification												

**Attachment B.8: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to On-Site Spring Water
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Spring Water Conc (mg/L)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Construction Worker Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
A004	VOC	Carbon Disulfide	75-15-0		3	1	3.70E-04		3.5E+02		1.1E-06
A004	VOC	Chlorobenzene	108-90-7	D	3	2	2.90E-04		3.6E+01		8.0E-06
A004	VOC	1,3-Dichlorobenzene	541-73-1	D	3	1	1.50E-04		9.2E+00		1.6E-05
A004	VOC	1,4-Dichlorobenzene	106-46-7	C	3	2	2.90E-04	6.7E+00	2.1E+02	4.3E-10	1.4E-06
A004	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	2.13E-03	1.8E+00	7.3E+00	1.2E-08	2.9E-04
A004	P/PCB	PCBs (total)	1336-36-3	B2	3	3	4.71E-03	1.5E-02	9.4E-03	3.2E-06	5.0E-01
A004	INORG	Aluminum	7429-90-5	D	3	2	5.62E+01		3.1E+05		1.8E-04
A004	INORG	Antimony	7440-36-0		3	1	4.30E-03		3.8E+01		1.1E-04
A004	INORG	Arsenic	7440-38-2	A	3	2	8.10E-02	1.4E+01	9.2E+01	5.6E-08	8.8E-04
A004	INORG	Barium	7440-39-3	D	3	3	8.90E-01		2.2E+04		4.1E-05
A004	INORG	Beryllium	7440-41-7	B1	3	1	1.40E-03		1.1E+01		1.3E-04
A004	INORG	Chromium (total)	7440-47-3		3	2	8.70E-02		5.6E+01		1.6E-03
A004	INORG	Cobalt	7440-48-4	B1	3	2	1.20E-01		8.1E+03		1.5E-05
A004	INORG	Copper	7440-50-8	D	3	2	3.80E-01		1.2E+04		3.1E-05
A004	INORG	Iron	7439-89-6	D	3	3	3.06E+02		9.2E+04		3.3E-03
A004	INORG	Manganese	7439-96-5	D	3	3	5.74E+01		4.1E+03		1.4E-02
A004	INORG	Mercury	7439-97-6	D	3	2	1.00E-03		2.6E-01		3.9E-03
A004	INORG	Nickel	7440-02-0	A	3	2	1.50E-01		2.4E+03		6.3E-05
A004	INORG	Silver	7440-22-4	D	3	1	3.10E-03		2.3E+02		1.3E-05
A004	INORG	Thallium	7440-28-0		3	2	9.80E-03		2.2E+01		4.5E-04
A004	INORG	Vanadium	7440-62-2		3	2	9.60E-02		1.4E+02		7.1E-04
A004	INORG	Zinc	7440-66-6	D	3	2	4.20E-01		1.1E+05		3.8E-06
A004a	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	2.13E-03	1.8E+00	7.3E+00	1.2E-08	2.9E-04
A004a	P/PCB	PCBs (total)	1336-36-3	B2	1	1	4.41E-03	1.5E-02	9.4E-03	3.0E-06	4.7E-01
A004a	INORG	Barium	7440-39-3	D	1	1	6.60E-02		2.2E+04		3.1E-06
A004a	INORG	Iron	7439-89-6	D	1	1	3.10E-01		9.2E+04		3.4E-06
A004a	INORG	Manganese	7439-96-5	D	1	1	5.35E-01		4.1E+03		1.3E-04
A004a	INORG	Thallium	7440-28-0		1	1	8.25E-03		2.2E+01		3.8E-04
A004a	INORG	Zinc	7440-66-6	D	1	1	9.50E-03		1.1E+05		8.7E-08
A010	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	2.13E-03	1.8E+00	7.3E+00	1.2E-08	2.9E-04
A010	P/PCB	PCBs (total)	1336-36-3	B2	3	1	4.41E-03	1.5E-02	9.4E-03	3.0E-06	4.7E-01
A010	INORG	Barium	7440-39-3	D	1	1	6.60E-02		2.2E+04		3.1E-06
A010	INORG	Iron	7439-89-6	D	1	1	3.10E-01		9.2E+04		3.4E-06
A010	INORG	Manganese	7439-96-5	D	1	1	5.35E-01		4.1E+03		1.3E-04
A010	INORG	Thallium	7440-28-0		1	1	8.25E-03		2.2E+01		3.8E-04
A010	INORG	Zinc	7440-66-6	D	1	1	9.50E-03		1.1E+05		8.7E-08
Note:											
1. Only constituents detected at each area are shown.											
2. Carc class - EPA Weight-of-Evidence Cancer Classification											

Attachment B.8: Nonsteady State Dermal Absorption of Chemicals from Groundwater and Spring Water Bedford, Indiana												
Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
VOC	Acetone	67-64-1	5.8E+01	-2.4E-01	5.2E-04	1.5E-03	2.2E-01	3.3E-01	3.0E-01	5.3E-01	1.0E+00	1.27E-06
VOC	Benzene	71-43-2	7.8E+01	2.1E+00	1.5E-02	5.0E-02	2.9E-01	3.7E-01	3.3E-01	6.9E-01	1.0E+00	3.70E-05
VOC	Bromodichloromethane	75-27-4	1.6E+02	2.1E+00	4.7E-03	2.3E-02	8.7E-01	3.5E-01	3.2E-01	2.1E+00	1.0E+00	1.70E-05
VOC	Bromomethane	74-83-9	9.5E+01	1.2E+00	2.8E-03	1.1E-02	3.6E-01	3.4E-01	3.1E-01	8.6E-01	1.0E+00	7.68E-06
VOC	2-Butanone	78-93-3	7.2E+01	2.9E-01	9.7E-04	3.2E-03	2.7E-01	3.4E-01	3.1E-01	6.4E-01	1.0E+00	2.46E-06
VOC	Carbon Disulfide	75-15-0	7.6E+01	2.0E+00	1.2E-02	4.2E-02	2.8E-01	3.6E-01	3.3E-01	6.7E-01	1.0E+00	3.11E-05
VOC	Chlorobenzene	108-90-7	1.1E+02	2.9E+00	2.9E-02	1.2E-01	4.5E-01	4.2E-01	3.8E-01	1.1E+00	1.0E+00	8.00E-05
VOC	Chloroethane	75-00-3	6.5E+01	1.4E+00	6.1E-03	1.9E-02	2.4E-01	3.5E-01	3.1E-01	5.8E-01	1.0E+00	1.49E-05
VOC	Chloroform	67-66-3	1.2E+02	1.9E+00	6.3E-03	2.6E-02	4.9E-01	3.5E-01	3.2E-01	1.2E+00	1.0E+00	1.86E-05
VOC	Chloromethane	74-87-3	5.0E+01	9.1E-01	3.3E-03	9.0E-03	2.0E-01	3.4E-01	3.1E-01	4.8E-01	1.0E+00	7.87E-06
VOC	Cumene	98-82-8	1.2E+02	3.7E+00	8.8E-02	3.7E-01	5.0E-01	6.1E-01	5.8E-01	1.2E+00	1.0E+00	2.44E-04
VOC	Cyclohexane	110-82-7	8.4E+01	3.4E+00	1.0E-01	3.5E-01	3.1E-01	6.0E-01	5.7E-01	7.5E-01	1.0E+00	2.30E-04
VOC	Dibromochloromethane	124-48-1	2.1E+02	2.2E+00	2.9E-03	1.6E-02	1.5E+00	3.4E-01	3.1E-01	3.7E+00	1.0E+00	1.42E-05
VOC	1,2-Dichlorobenzene	95-50-1	1.5E+02	3.4E+00	4.4E-02	2.0E-01	7.0E-01	4.8E-01	4.4E-01	1.7E+00	1.0E+00	1.46E-04
VOC	1,3-Dichlorobenzene	541-73-1	1.5E+02	3.4E+00	4.1E-02	1.9E-01	7.0E-01	4.7E-01	4.3E-01	1.7E+00	1.0E+00	1.35E-04
VOC	1,4-Dichlorobenzene	106-46-7	1.5E+02	3.4E+00	4.3E-02	2.0E-01	7.0E-01	4.8E-01	4.4E-01	1.7E+00	1.0E+00	1.44E-04
VOC	Dichlorodifluoromethane	75-71-8	1.2E+02	2.2E+00	8.9E-03	3.8E-02	5.0E-01	3.6E-01	3.3E-01	1.2E+00	1.0E+00	2.63E-05
VOC	1,1-Dichloroethane	75-34-3	9.9E+01	1.8E+00	6.7E-03	2.6E-02	3.8E-01	3.5E-01	3.2E-01	9.0E-01	1.0E+00	1.83E-05
VOC	1,2-Dichloroethane	107-06-2	9.9E+01	1.5E+00	4.1E-03	1.6E-02	3.8E-01	3.4E-01	3.1E-01	9.0E-01	1.0E+00	1.13E-05
VOC	cis-1,2-Dichloroethene	156-59-2	9.7E+01	1.9E+00	7.7E-03	2.9E-02	3.7E-01	3.5E-01	3.2E-01	8.8E-01	1.0E+00	2.07E-05
VOC	trans-1,2-Dichloroethene	156-60-5	9.7E+01	2.1E+00	1.1E-02	4.0E-02	3.7E-01	3.6E-01	3.3E-01	8.8E-01	1.0E+00	2.83E-05
VOC	Ethyl Benzene	100-41-4	1.1E+02	3.1E+00	4.8E-02	1.9E-01	4.1E-01	4.7E-01	4.3E-01	9.9E-01	1.0E+00	1.27E-04
VOC	2-Hexanone	591-78-6	1.0E+02	1.4E+00	3.5E-03	1.4E-02	3.8E-01	3.4E-01	3.1E-01	9.2E-01	1.0E+00	9.75E-06
VOC	Methyl Acetate	79-20-9	7.4E+01	1.8E-01	8.0E-04	2.7E-03	2.7E-01	3.4E-01	3.0E-01	6.6E-01	1.0E+00	2.04E-06
VOC	Methyl tert-butyl ether	1634-04-4	8.8E+01	1.2E+00	3.3E-03	1.2E-02	3.3E-01	3.4E-01	3.1E-01	7.9E-01	1.0E+00	8.84E-06
VOC	4-Methyl-2-pentanone	108-10-1	1.0E+02	1.2E+00	2.7E-03	1.0E-02	3.8E-01	3.4E-01	3.1E-01	9.2E-01	1.0E+00	7.32E-06
VOC	Methylcyclohexane	108-87-2	9.8E+01	3.6E+00	1.1E-01	4.1E-01	3.7E-01	6.5E-01	6.2E-01	9.0E-01	1.0E+00	2.64E-04
VOC	Methylene Chloride	75-09-2	8.5E+01	1.3E+00	3.5E-03	1.3E-02	3.1E-01	3.4E-01	3.1E-01	7.5E-01	1.0E+00	9.25E-06
VOC	Tetrachloroethene	127-18-4	1.7E+02	2.7E+00	1.1E-02	5.4E-02	8.9E-01	3.7E-01	3.4E-01	2.1E+00	1.0E+00	3.99E-05
VOC	Toluene	108-88-3	9.2E+01	2.8E+00	3.2E-02	1.2E-01	3.5E-01	4.2E-01	3.8E-01	8.3E-01	1.0E+00	8.08E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	1.8E+02	4.0E+00	6.8E-02	3.5E-01	1.1E+00	6.0E-01	5.6E-01	2.6E+00	1.0E+00	2.76E-04
VOC	1,1,1-Trichloroethane	71-55-6	1.3E+02	2.5E+00	1.2E-02	5.5E-02	5.9E-01	3.7E-01	3.4E-01	1.4E+00	1.0E+00	3.85E-05
VOC	Trichloroethene	79-01-6	1.3E+02	2.7E+00	1.8E-02	7.9E-02	5.7E-01	3.9E-01	3.5E-01	1.4E+00	1.0E+00	5.53E-05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.9E+02	3.1E+00	1.7E-02	8.9E-02	1.2E+00	3.9E-01	3.6E-01	2.8E+00	1.0E+00	7.16E-05
VOC	Vinyl Chloride	75-01-4	6.3E+01	1.5E+00	6.9E-03	2.1E-02	2.4E-01	3.5E-01	3.2E-01	5.7E-01	1.0E+00	1.69E-05
VOC	Xylenes (total)	1330-20-7	1.1E+02	3.2E+00	5.0E-02	2.0E-01	4.1E-01	4.8E-01	4.4E-01	9.9E-01	1.0E+00	1.32E-04
SVOC	Acenaphthene	83-32-9	1.5E+02	3.9E+00	8.4E-02	4.0E-01	7.7E-01	6.4E-01	6.1E-01	1.8E+00	1.0E+00	2.96E-04
SVOC	Acenaphthylene	208-96-8	1.5E+02	4.1E+00	1.1E-01	5.1E-01	7.5E-01	7.3E-01	7.2E-01	1.8E+00	1.0E+00	3.78E-04
SVOC	Acetophenone	98-86-2	1.2E+02	1.6E+00	3.7E-03	1.6E-02	5.0E-01	3.4E-01	3.1E-01	1.2E+00	1.0E+00	1.11E-05
SVOC	Anthracene	120-12-7	1.8E+02	4.6E+00	1.6E-01	8.2E-01	1.0E+00	1.0E+00	1.1E+00	4.0E+00	1.0E+00	6.41E-04
SVOC	Benzaldehyde	100-52-7	1.1E+02	1.5E+00	3.8E-03	1.5E-02	4.1E-01	3.4E-01	3.1E-01	9.9E-01	1.0E+00	1.07E-05
SVOC	Benzo(a)anthracene	56-55-3	2.3E+02	5.7E+00	4.8E-01	2.8E+00	2.0E+00	2.9E+00	6.3E+00	8.4E+00	9.0E-01	2.40E-03
SVOC	Benzo(a)pyrene	50-32-8	2.5E+02	6.1E+00	6.6E-01	4.0E+00	2.7E+00	4.1E+00	1.2E+01	1.2E+01	8.0E-01	3.41E-03

Attachment B.8: Nonsteady State Dermal Absorption of Chemicals from Groundwater and Spring Water Bedford, Indiana												
Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
SVOC	Benzo(b)fluoranthene	205-99-2	2.5E+02	6.2E+00	7.6E-01	4.6E+00	2.7E+00	4.7E+00	1.5E+01	1.2E+01	8.0E-01	3.90E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	2.8E+02	7.2E+00	1.0E+00	6.4E+00	3.7E+00	6.4E+00	2.8E+01	1.6E+01	7.0E-01	5.27E-03
SVOC	Benzo(k)fluoranthene	207-08-9	2.5E+02	6.2E+00	7.6E-01	4.6E+00	2.7E+00	4.7E+00	1.5E+01	1.2E+01	8.0E-01	3.90E-03
SVOC	Biphenyl	92-52-4	1.5E+02	4.1E+00	1.1E-01	5.2E-01	7.7E-01	7.4E-01	7.3E-01	1.8E+00	1.0E+00	3.86E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	3.9E+02	7.3E+00	6.8E-01	5.1E+00	1.6E+01	5.2E+00	1.9E+01	7.1E+01	4.0E-01	4.26E-03
SVOC	Butylbenzylphthalate	85-68-7	3.1E+02	4.8E+00	4.4E-02	3.0E-01	5.9E+00	5.6E-01	5.2E-01	1.4E+01	9.0E-01	3.78E-04
SVOC	Caprolactam	105-60-2	1.1E+02	-1.9E-01	2.8E-04	1.1E-03	4.5E-01	3.3E-01	3.0E-01	1.1E+00	1.0E+00	8.01E-07
SVOC	Carbazole	86-74-8	1.7E+02	3.6E+00	4.3E-02	2.1E-01	9.1E-01	4.9E-01	4.5E-01	2.2E+00	1.0E+00	1.60E-04
SVOC	4-Chloroaniline	106-47-8	1.3E+02	1.9E+00	5.1E-03	2.2E-02	5.4E-01	3.5E-01	3.2E-01	1.3E+00	1.0E+00	1.56E-05
SVOC	Chrysene	218-01-9	2.3E+02	5.7E+00	4.8E-01	2.8E+00	2.0E+00	2.9E+00	6.3E+00	8.4E+00	9.0E-01	2.40E-03
SVOC	Dibenz(a,h)anthracene	53-70-3	2.8E+02	6.7E+00	1.0E+00	6.4E+00	3.8E+00	6.5E+00	2.9E+01	1.7E+01	7.0E-01	5.34E-03
SVOC	Dibenzofuran	132-64-9	1.7E+02	4.1E+00	9.5E-02	4.7E-01	9.2E-01	7.0E-01	6.8E-01	2.2E+00	1.0E+00	3.56E-04
SVOC	Diethylphthalate	84-66-2	2.2E+02	2.5E+00	4.0E-03	2.3E-02	1.8E+00	3.5E-01	3.2E-01	4.4E+00	1.0E+00	2.14E-05
SVOC	2,4-Dimethylphenol	105-67-9	1.2E+02	2.4E+00	1.2E-02	5.0E-02	5.1E-01	3.7E-01	3.3E-01	1.2E+00	1.0E+00	3.52E-05
SVOC	Di-n-butylphthalate	84-74-2	2.8E+02	4.6E+00	4.8E-02	3.1E-01	3.8E+00	5.6E-01	5.3E-01	9.1E+00	9.0E-01	3.31E-04
SVOC	2,6-Dinitrotoluene	606-20-2	1.8E+02	1.9E+00	2.6E-03	1.3E-02	1.1E+00	3.4E-01	3.1E-01	2.6E+00	1.0E+00	1.06E-05
SVOC	Di-n-octylphthalate	117-84-0	3.9E+02	8.1E+00	1.0E+00	7.6E+00	1.6E+01	7.6E+00	3.9E+01	7.2E+01	3.0E-01	4.72E-03
SVOC	Fluoranthene	206-44-0	2.0E+02	5.1E+00	2.8E-01	1.5E+00	1.4E+00	1.7E+00	2.4E+00	5.7E+00	1.0E+00	1.31E-03
SVOC	Fluorene	86-73-7	1.7E+02	4.2E+00	1.1E-01	5.5E-01	9.0E-01	7.7E-01	7.7E-01	2.2E+00	1.0E+00	4.13E-04
SVOC	Hexachlorobenzene	118-74-1	2.8E+02	5.9E+00	3.1E-01	2.0E+00	4.1E+00	2.1E+00	3.7E+00	1.7E+01	8.0E-01	1.98E-03
SVOC	Hexachlorobutadiene	87-68-3	2.6E+02	4.8E+00	8.2E-02	5.1E-01	3.0E+00	7.3E-01	7.2E-01	7.3E+00	9.0E-01	5.03E-04
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2.8E+02	6.7E+00	1.0E+00	6.4E+00	3.7E+00	6.4E+00	2.8E+01	1.6E+01	7.0E-01	5.27E-03
SVOC	2-Methylnaphthalene	91-57-6	1.4E+02	3.9E+00	8.9E-02	4.1E-01	6.6E-01	6.5E-01	6.2E-01	1.6E+00	1.0E+00	2.89E-04
SVOC	Methylphenol (total)	1319-77-3	1.1E+02		7.8E-03	3.1E-02	4.2E-01	3.5E-01	3.2E-01	1.0E+00	1.0E+00	2.19E-05
SVOC	Naphthalene	91-20-3	1.3E+02	3.4E+00	5.0E-02	2.2E-01	5.5E-01	4.9E-01	4.5E-01	1.3E+00	1.0E+00	1.49E-04
SVOC	Phenanthrene	85-01-8	1.8E+02	4.5E+00	1.4E-01	7.2E-01	1.0E+00	9.1E-01	9.7E-01	4.1E+00	1.0E+00	5.59E-04
SVOC	Phenol	108-95-2	9.4E+01	1.5E+00	4.5E-03	1.7E-02	3.5E-01	3.4E-01	3.1E-01	8.5E-01	1.0E+00	1.20E-05
SVOC	Pyrene	129-00-0	2.0E+02	5.1E+00	2.8E-01	1.5E+00	1.4E+00	1.6E+00	2.4E+00	5.7E+00	1.0E+00	1.29E-03
P/PCB	PCBs (total)	1336-36-3	3.3E+02	6.5E+00	4.5E-01	3.1E+00	7.2E+00	3.2E+00	7.7E+00	3.1E+01	7.0E-01	3.31E-03
INORG	Aluminum	7429-90-5	2.7E+01		1.0E-03							2.00E-06
INORG	Antimony	7440-36-0	1.2E+02		1.0E-03							2.00E-06
INORG	Arsenic	7440-38-2	7.5E+01		1.0E-03							2.00E-06
INORG	Barium	7440-39-3	1.4E+02		1.0E-03							2.00E-06
INORG	Beryllium	7440-41-7	9.0E+00		1.0E-03							2.00E-06
INORG	Cadmium	7440-43-9	1.1E+02		1.0E-03							2.00E-06
INORG	Chromium (total)	7440-47-3	5.2E+01		1.0E-03							2.00E-06
INORG	Cobalt	7440-48-4	5.9E+01		4.0E-04							8.00E-07
INORG	Copper	7440-50-8	6.4E+01		1.0E-03							2.00E-06
INORG	Cyanide (amenable)	57-12-5A	2.6E+01		1.0E-03							2.00E-06
INORG	Cyanide (total)	57-12-5	2.6E+01		1.0E-03							2.00E-06
INORG	Iron	7439-89-6	5.6E+01		1.0E-03							2.00E-06
INORG	Lead	7439-92-1	2.1E+02		1.0E-03							2.00E-06
INORG	Manganese	7439-96-5	5.5E+01		1.0E-03							2.00E-06

Attachment B.8: Nonsteady State Dermal Absorption of Chemicals from Groundwater and Spring Water Bedford, Indiana												
Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
INORG	Mercury	7439-97-6	2.0E+02		1.0E-03							2.00E-06
INORG	Nickel	7440-02-0	5.9E+01		2.0E-04							4.00E-07
INORG	Selenium	7782-49-2	7.9E+01		1.0E-03							2.00E-06
INORG	Silver	7440-22-4	1.1E+02		6.0E-04							1.20E-06
INORG	Thallium	7440-28-0	2.0E+02		1.0E-03							2.00E-06
INORG	Vanadium	7440-62-2	5.1E+01		1.0E-03							2.00E-06
INORG	Zinc	7440-66-6	6.5E+01		6.0E-04							1.20E-06
Note:	Event Time (Construction Worker)	hours	t	2								

**Attachment B.8: Normalized Vapor Flux to Ambient Air from Exposed Groundwater and Spring Water
Bedford, Indiana**

Chem Group	Chemical	CASRN	H (unitless)	MW (g/mol)	k_G (cm/s)	k_L (cm/s)	K_L (cm/s)	J_L (mg/m²-s per mg/L)
VOC	Acetone	67-64-1	8.0E-04	5.8E+01	5.42E-01	1.43E-03	3.31E-04	3.31E-03
VOC	Benzene	71-43-2	1.1E-01	7.8E+01	4.91E-01	1.23E-03	1.21E-03	1.21E-02
VOC	Bromodichloromethane	75-27-4	3.3E-02	1.6E+02	3.83E-01	8.51E-04	7.97E-04	7.97E-03
VOC	Bromomethane	74-83-9	1.3E-01	9.5E+01	4.60E-01	1.12E-03	1.10E-03	1.10E-02
VOC	2-Butanone	78-93-3	1.1E-03	7.2E+01	5.04E-01	1.28E-03	3.97E-04	3.97E-03
VOC	Carbon Disulfide	75-15-0	6.2E-01	7.6E+01	4.95E-01	1.25E-03	1.24E-03	1.24E-02
VOC	Chlorobenzene	108-90-7	7.6E-02	1.1E+02	4.34E-01	1.03E-03	9.96E-04	9.96E-03
VOC	Chloroethane	75-00-3	1.8E-01	6.5E+01	5.23E-01	1.36E-03	1.34E-03	1.34E-02
VOC	Chloroform	67-66-3	7.5E-02	1.2E+02	4.26E-01	9.97E-04	9.67E-04	9.67E-03
VOC	Chloromethane	74-87-3	1.8E-01	5.0E+01	5.68E-01	1.53E-03	1.51E-03	1.51E-02
VOC	Cumene	98-82-8	2.4E+01	1.2E+02	4.25E-01	9.94E-04	9.94E-04	9.94E-03
VOC	Cyclohexane	110-82-7	4.0E+00	8.4E+01	4.78E-01	1.19E-03	1.19E-03	1.19E-02
VOC	Dibromochloromethane	124-48-1	1.6E-02	2.1E+02	3.53E-01	7.55E-04	6.66E-04	6.66E-03
VOC	1,2-Dichlorobenzene	95-50-1	3.9E-02	1.5E+02	3.97E-01	8.99E-04	8.49E-04	8.49E-03
VOC	1,3-Dichlorobenzene	541-73-1	6.3E-02	1.5E+02	3.97E-01	8.99E-04	8.68E-04	8.68E-03
VOC	1,4-Dichlorobenzene	106-46-7	5.0E-02	1.5E+02	3.97E-01	8.99E-04	8.60E-04	8.60E-03
VOC	Dichlorodifluoromethane	75-71-8	7.0E+00	1.2E+02	4.24E-01	9.91E-04	9.91E-04	9.91E-03
VOC	1,1-Dichloroethane	75-34-3	1.2E-01	9.9E+01	4.53E-01	1.10E-03	1.07E-03	1.07E-02
VOC	1,2-Dichloroethane	107-06-2	2.0E-02	9.9E+01	4.53E-01	1.10E-03	9.77E-04	9.77E-03
VOC	cis-1,2-Dichloroethene	156-59-2	8.4E-02	9.7E+01	4.56E-01	1.11E-03	1.08E-03	1.08E-02
VOC	trans-1,2-Dichloroethene	156-60-5	1.9E-01	9.7E+01	4.56E-01	1.11E-03	1.09E-03	1.09E-02
VOC	Ethyl Benzene	100-41-4	1.6E-01	1.1E+02	4.43E-01	1.06E-03	1.04E-03	1.04E-02
VOC	2-Hexanone	591-78-6	3.6E-02	1.0E+02	4.51E-01	1.09E-03	1.02E-03	1.02E-02
VOC	Methyl Acetate	79-20-9	5.8E-05	7.4E+01	4.99E-01	1.27E-03	2.81E-05	2.81E-04
VOC	Methyl tert-butyl ether	1634-04-4	1.2E-02	8.8E+01	4.71E-01	1.16E-03	9.63E-04	9.63E-03
VOC	4-Methyl-2-pentanone	108-10-1	2.8E-03	1.0E+02	4.51E-01	1.09E-03	5.87E-04	5.87E-03
VOC	Methylcyclohexane	108-87-2	8.8E+00	9.8E+01	4.54E-01	1.10E-03	1.10E-03	1.10E-02
VOC	Methylene Chloride	75-09-2	4.5E-02	8.5E+01	4.77E-01	1.18E-03	1.12E-03	1.12E-02
VOC	Tetrachloroethene	127-18-4	3.8E-01	1.7E+02	3.81E-01	8.46E-04	8.41E-04	8.41E-03
VOC	Toluene	108-88-3	1.4E-01	9.2E+01	4.64E-01	1.14E-03	1.12E-03	1.12E-02
VOC	1,2,4-Trichlorobenzene	120-82-1	2.9E-02	1.8E+02	3.70E-01	8.09E-04	7.52E-04	7.52E-03
VOC	1,1,1-Trichloroethane	71-55-6	3.5E-01	1.3E+02	4.10E-01	9.43E-04	9.37E-04	9.37E-03
VOC	Trichloroethene	79-01-6	2.1E-01	1.3E+02	4.12E-01	9.51E-04	9.40E-04	9.40E-03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	9.8E+00	1.9E+02	3.66E-01	7.96E-04	7.96E-04	7.96E-03

**Attachment B.8: Normalized Vapor Flux to Ambient Air from Exposed Groundwater and Spring Water
Bedford, Indiana**

Chem Group	Chemical	CASRN	H (unitless)	MW (g/mol)	k_G (cm/s)	k_L (cm/s)	K_L (cm/s)	J_L (mg/m ² -s per mg/L)
VOC	Vinyl Chloride	75-01-4	5.6E-01	6.3E+01	5.29E-01	1.38E-03	1.37E-03	1.37E-02
VOC	Xylenes (total)	1330-20-7	1.4E-01	1.1E+02	4.43E-01	1.06E-03	1.04E-03	1.04E-02
SVOC	Acenaphthene	83-32-9	3.2E-03	1.5E+02	3.91E-01	8.77E-04	5.14E-04	5.14E-03
SVOC	Acenaphthylene	208-96-8	2.3E-03	1.5E+02	3.92E-01	8.83E-04	4.47E-04	4.47E-03
SVOC	Acetophenone	98-86-2	2.2E-04	1.2E+02	4.25E-01	9.94E-04	8.49E-05	8.49E-04
SVOC	Anthracene	120-12-7	1.3E-03	1.8E+02	3.72E-01	8.16E-04	3.09E-04	3.09E-03
SVOC	Benzaldehyde	100-52-7	4.9E-04	1.1E+02	4.43E-01	1.06E-03	1.79E-04	1.79E-03
SVOC	Benzo(a)anthracene	56-55-3	6.9E-05	2.3E+02	3.42E-01	7.21E-04	2.27E-05	2.27E-04
SVOC	Benzo(a)pyrene	50-32-8	2.3E-05	2.5E+02	3.31E-01	6.86E-04	7.58E-06	7.58E-05
SVOC	Benzo(b)fluoranthene	205-99-2	2.3E-03	2.5E+02	3.31E-01	6.86E-04	3.59E-04	3.59E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	2.9E-06	2.8E+02	3.21E-01	6.55E-04	9.24E-07	9.24E-06
SVOC	Benzo(k)fluoranthene	207-08-9	1.7E-05	2.5E+02	3.31E-01	6.86E-04	5.58E-06	5.58E-05
SVOC	Biphenyl	92-52-4	6.1E-03	1.5E+02	3.91E-01	8.77E-04	6.42E-04	6.42E-03
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.1E-06	3.9E+02	2.86E-01	5.51E-04	5.97E-07	5.97E-06
SVOC	Butylbenzylphthalate	85-68-7	2.6E-05	3.1E+02	3.08E-01	6.17E-04	7.87E-06	7.87E-05
SVOC	Caprolactam	105-60-2	5.2E-07	1.1E+02	4.33E-01	1.02E-03	2.24E-07	2.24E-06
SVOC	Carbazole	86-74-8	3.1E-07	1.7E+02	3.80E-01	8.43E-04	1.19E-07	1.19E-06
SVOC	4-Chloroaniline	106-47-8	6.8E-06	1.3E+02	4.16E-01	9.65E-04	2.82E-06	2.82E-05
SVOC	Chrysene	218-01-9	1.9E-03	2.3E+02	3.42E-01	7.21E-04	3.46E-04	3.46E-03
SVOC	Dibenz(a,h)anthracene	53-70-3	3.0E-07	2.8E+02	3.20E-01	6.53E-04	9.66E-08	9.66E-07
SVOC	Dibenzofuran	132-64-9	2.6E-04	1.7E+02	3.79E-01	8.40E-04	8.75E-05	8.75E-04
SVOC	Diethylphthalate	84-66-2	9.3E-06	2.2E+02	3.46E-01	7.31E-04	3.18E-06	3.18E-05
SVOC	2,4-Dimethylphenol	105-67-9	4.1E-05	1.2E+02	4.22E-01	9.86E-04	1.70E-05	1.70E-04
SVOC	Di-n-butylphthalate	84-74-2	1.9E-08	2.8E+02	3.20E-01	6.53E-04	6.17E-09	6.17E-08
SVOC	2,6-Dinitrotoluene	606-20-2	1.5E-05	1.8E+02	3.69E-01	8.07E-04	5.61E-06	5.61E-05
SVOC	Di-n-octylphthalate	117-84-0	1.4E-03	3.9E+02	2.86E-01	5.51E-04	2.29E-04	2.29E-03
SVOC	Fluoranthene	206-44-0	3.3E-04	2.0E+02	3.57E-01	7.66E-04	1.02E-04	1.02E-03
SVOC	Fluorene	86-73-7	1.3E-03	1.7E+02	3.81E-01	8.45E-04	3.13E-04	3.13E-03
SVOC	Hexachlorobenzene	118-74-1	2.7E-02	2.8E+02	3.18E-01	6.46E-04	6.01E-04	6.01E-03
SVOC	Hexachlorobutadiene	87-68-3	1.7E-01	2.6E+02	3.28E-01	6.75E-04	6.67E-04	6.67E-03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.3E-05	2.8E+02	3.21E-01	6.55E-04	1.04E-05	1.04E-04
SVOC	2-Methylnaphthalene	91-57-6	1.1E-02	1.4E+02	4.01E-01	9.14E-04	7.52E-04	7.52E-03
SVOC	Methylphenol (total)	1319-77-3	1.8E-05	1.1E+02	4.40E-01	1.05E-03	7.73E-06	7.73E-05
SVOC	Naphthalene	91-20-3	9.9E-03	1.3E+02	4.16E-01	9.62E-04	7.80E-04	7.80E-03

**Attachment B.8: Normalized Vapor Flux to Ambient Air from Exposed Groundwater and Spring Water
Bedford, Indiana**

Chem Group	Chemical	CASRN	H (unitless)	MW (g/mol)	k_G (cm/s)	k_L (cm/s)	K_L (cm/s)	J_L (mg/m ² -s per mg/L)
SVOC	Phenanthrene	85-01-8	4.8E-04	1.8E+02	3.72E-01	8.16E-04	1.46E-04	1.46E-03
SVOC	Phenol	108-95-2	8.2E-06	9.4E+01	4.61E-01	1.12E-03	3.74E-06	3.74E-05
SVOC	Pyrene	129-00-0	2.3E-04	2.0E+02	3.57E-01	7.66E-04	7.28E-05	7.28E-04
P/PCB	PCBs (total)	1336-36-3	4.1E-02	3.3E+02	3.03E-01	6.02E-04	5.74E-04	5.74E-03
INORG	Aluminum	7429-90-5		2.7E+01	7.00E-01	2.10E-03		
INORG	Antimony	7440-36-0		1.2E+02	4.23E-01	9.87E-04		
INORG	Arsenic	7440-38-2		7.5E+01	4.97E-01	1.26E-03		
INORG	Barium	7440-39-3		1.4E+02	4.06E-01	9.30E-04		
INORG	Beryllium	7440-41-7		9.0E+00	1.01E+00	3.63E-03		
INORG	Cadmium	7440-43-9		1.1E+02	4.34E-01	1.03E-03		
INORG	Chromium (total)	7440-47-3		5.2E+01	5.62E-01	1.51E-03		
INORG	Cobalt	7440-48-4		5.9E+01	5.39E-01	1.42E-03		
INORG	Copper	7440-50-8		6.4E+01	5.26E-01	1.37E-03		
INORG	Cyanide (amenable)	57-12-5A		2.6E+01	7.09E-01	2.14E-03		
INORG	Cyanide (total)	57-12-5		2.6E+01	7.09E-01	2.14E-03		
INORG	Iron	7439-89-6		5.6E+01	5.49E-01	1.46E-03		
INORG	Lead	7439-92-1		2.1E+02	3.54E-01	7.57E-04		
INORG	Manganese	7439-96-5		5.5E+01	5.52E-01	1.47E-03		
INORG	Mercury	7439-97-6	1.5E-01	2.0E+02	3.57E-01	7.69E-04	7.57E-04	7.57E-03
INORG	Nickel	7440-02-0		5.9E+01	5.40E-01	1.42E-03		
INORG	Selenium	7782-49-2		7.9E+01	4.89E-01	1.23E-03		
INORG	Silver	7440-22-4		1.1E+02	4.40E-01	1.05E-03		
INORG	Thallium	7440-28-0		2.0E+02	3.55E-01	7.62E-04		
INORG	Vanadium	7440-62-2		5.1E+01	5.66E-01	1.53E-03		
INORG	Zinc	7440-66-6		6.5E+01	5.21E-01	1.35E-03		
	molecular weight of oxygen	g/mol	MW_{O2}	32				
	molecular weight of water	g/mol	MW_{H2O}	18				
	absolute temperature	K	T	287				
	liquid-phase mass transfer coefficient for oxygen	cm/s	k_{L,O2}	0.002				
	gas-phase mass transfer coefficient for water vapor at 25 C	cm/s	K_{G,H2O}	0.833				

**Attachment B.8: Risk Based Cancer Criteria for Exposure of Construction Workers to Groundwater and Spring Water
Bedford, Indiana**

				Pathway:	Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/L)	DA (L/cm ² -event)	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	URF (mg/m ³) ⁻¹	RBC (mg/L)	Combined RBC (mg/L)
VOC	Acetone	67-64-1	ID	1.0E+00	2.8E-07			1.3E-06	1.2E-07			3.6E-02			
VOC	Benzene	71-43-2	A	1.0E+00	2.8E-07	5.5E-02	6.5E+02	3.7E-05	3.4E-06	5.5E-02	5.3E+01	1.3E-01	7.8E-03	5.0E+00	4.5E+00
VOC	Bromodichloromethane	75-27-4	B2	1.0E+00	2.8E-07	6.2E-02	5.8E+02	1.7E-05	1.6E-06	6.2E-02	1.0E+02	8.7E-02	1.8E-02	3.3E+00	3.2E+00
VOC	Bromomethane	74-83-9	D	1.0E+00	2.8E-07			7.7E-06	7.1E-07			1.2E-01			
VOC	2-Butanone	78-93-3	ID	1.0E+00	2.8E-07			2.5E-06	2.3E-07			4.4E-02			
VOC	Carbon Disulfide	75-15-0		1.0E+00	2.8E-07			3.1E-05	2.9E-06			1.4E-01			
VOC	Chlorobenzene	108-90-7	D	1.0E+00	2.8E-07			8.0E-05	7.4E-06			1.1E-01			
VOC	Chloroethane	75-00-3		1.0E+00	2.8E-07	2.9E-03	1.2E+04	1.5E-05	1.4E-06	2.9E-03	2.5E+03	1.5E-01			2.1E+03
VOC	Chloroform	67-66-3	B2	1.0E+00	2.8E-07			1.9E-05	1.7E-06			1.1E-01	2.3E-02	2.1E+00	2.1E+00
VOC	Chloromethane	74-87-3	D	1.0E+00	2.8E-07			7.9E-06	7.3E-07			1.7E-01			
VOC	Cumene	98-82-8	D	1.0E+00	2.8E-07			2.4E-04	2.3E-05			1.1E-01			
VOC	Cyclohexane	110-82-7	ID	1.0E+00	2.8E-07			2.3E-04	2.1E-05			1.3E-01			
VOC	Dibromochloromethane	124-48-1	C	1.0E+00	2.8E-07	8.4E-02	4.3E+02	1.4E-05	1.3E-06	8.4E-02	9.1E+01	7.3E-02	2.4E-02	2.9E+00	2.8E+00
VOC	1,2-Dichlorobenzene	95-50-1	D	1.0E+00	2.8E-07			1.5E-04	1.3E-05			9.3E-02			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.0E+00	2.8E-07			1.4E-04	1.2E-05			9.5E-02			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.0E+00	2.8E-07	2.4E-02	1.5E+03	1.4E-04	1.3E-05	2.4E-02	3.1E+01	9.4E-02	6.3E-03	8.6E+00	6.7E+00
VOC	Dichlorodifluoromethane	75-71-8		1.0E+00	2.8E-07			2.6E-05	2.4E-06			1.1E-01			
VOC	1,1-Dichloroethane	75-34-3	C	1.0E+00	2.8E-07			1.8E-05	1.7E-06			1.2E-01			
VOC	1,2-Dichloroethane	107-06-2	B2	1.0E+00	2.8E-07	9.1E-02	3.9E+02	1.1E-05	1.0E-06	9.1E-02	1.1E+02	1.1E-01	2.6E-02	1.8E+00	1.8E+00
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.0E+00	2.8E-07			2.1E-05	1.9E-06			1.2E-01			
VOC	trans-1,2-Dichloroethene	156-60-5		1.0E+00	2.8E-07			2.8E-05	2.6E-06			1.2E-01			
VOC	Ethyl Benzene	100-41-4	D	1.0E+00	2.8E-07			1.3E-04	1.2E-05			1.1E-01			
VOC	2-Hexanone	591-78-6		1.0E+00	2.8E-07			9.8E-06	9.0E-07			1.1E-01			
VOC	Methyl Acetate	79-20-9		1.0E+00	2.8E-07			2.0E-06	1.9E-07			3.1E-03			
VOC	Methyl tert-butyl ether	1634-04-4		1.0E+00	2.8E-07	3.3E-03	1.1E+04	8.8E-06	8.2E-07	3.3E-03	3.7E+03	1.1E-01	1.0E-04	4.8E+02	4.1E+02
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.0E+00	2.8E-07			7.3E-06	6.7E-07			6.4E-02			
VOC	Methylcyclohexane	108-87-2		1.0E+00	2.8E-07			2.6E-04	2.4E-05			1.2E-01			
VOC	Methylene Chloride	75-09-2	B2	1.0E+00	2.8E-07	7.5E-03	4.8E+03	9.3E-06	8.5E-07	7.5E-03	1.6E+03	1.2E-01	4.7E-04	8.9E+01	8.2E+01
VOC	Tetrachloroethene	127-18-4	C-B2	1.0E+00	2.8E-07	5.2E-02	6.9E+02	4.0E-05	3.7E-06	5.2E-02	5.2E+01	9.2E-02	3.1E-03	1.8E+01	1.3E+01
VOC	Toluene	108-88-3	D	1.0E+00	2.8E-07			8.1E-05	7.5E-06			1.2E-01			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.0E+00	2.8E-07			2.8E-04	2.5E-05			8.2E-02			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.0E+00	2.8E-07			3.9E-05	3.6E-06			1.0E-01			
VOC	Trichloroethene	79-01-6	C-B2	1.0E+00	2.8E-07	1.1E-02	3.3E+03	5.5E-05	5.1E-06	1.1E-02	1.8E+02	1.0E-01	1.7E-03	2.9E+01	2.5E+01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.0E+00	2.8E-07			7.2E-05	6.6E-06			8.7E-02			
VOC	Vinyl Chloride	75-01-4	A	1.0E+00	2.8E-07	1.4E+00	2.6E+01	1.7E-05	1.6E-06	1.4E+00	4.6E+00	1.5E-01	8.8E-03	3.9E+00	1.9E+00
VOC	Xylenes (total)	1330-20-7	ID	1.0E+00	2.8E-07			1.3E-04	1.2E-05			1.1E-01			
SVOC	Acenaphthene	83-32-9		1.0E+00	2.8E-07			3.0E-04	2.7E-05			5.6E-02			
SVOC	Acenaphthylene	208-96-8	D	1.0E+00	2.8E-07			3.8E-04	3.5E-05			4.9E-02			
SVOC	Acetophenone	98-86-2	D	1.0E+00	2.8E-07			1.1E-05	1.0E-06			9.3E-03			
SVOC	Anthracene	120-12-7	D	1.0E+00	2.8E-07			6.4E-04	5.9E-05			3.4E-02			
SVOC	Benzaldehyde	100-52-7		1.0E+00	2.8E-07			1.1E-05	9.9E-07			2.0E-02			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.0E+00	2.8E-07	7.3E-01	4.9E+01	2.4E-03	2.2E-04	7.3E-01	6.2E-02	2.5E-03	2.1E-01	9.8E+00	6.1E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	1.0E+00	2.8E-07	7.3E+00	4.9E+00	3.4E-03	3.1E-04	7.3E+00	4.4E-03	8.3E-04	8.9E-01	6.9E+00	4.4E-03
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.0E+00	2.8E-07	7.3E-01	4.9E+01	3.9E-03	3.6E-04	7.3E-01	3.8E-02	3.9E-02	2.1E-01	6.2E-01	3.6E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.0E+00	2.8E-07			5.3E-03	4.9E-04			1.0E-04			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.0E+00	2.8E-07	7.3E-02	4.9E+02	3.9E-03	3.6E-04	7.3E-02	3.8E-01	6.1E-04	2.1E-02	4.0E+02	3.8E-01

**Attachment B.8: Risk Based Cancer Criteria for Exposure of Construction Workers to Groundwater and Spring Water
Bedford, Indiana**

				Pathway:	Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/L)	DA (L/cm ² -event)	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	URF (mg/m ³) ⁻¹	RBC (mg/L)	Combined RBC (mg/L)
SVOC	Biphenyl	92-52-4	D	1.0E+00	2.8E-07			3.9E-04	3.6E-05			7.0E-02			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.0E+00	2.8E-07	1.4E-02	2.6E+03	4.3E-03	3.9E-04	1.4E-02	1.8E+00	6.5E-05	4.0E-03	2.0E+04	1.8E+00
SVOC	Butylbenzylphthalate	85-68-7	C	1.0E+00	2.8E-07			3.8E-04	3.5E-05			8.6E-04			
SVOC	Caprolactam	105-60-2		1.0E+00	2.8E-07			8.0E-07	7.4E-08			2.5E-05			
SVOC	Carbazole	86-74-8	B2	1.0E+00	2.8E-07	2.0E-02	1.8E+03	1.6E-04	1.5E-05	2.0E-02	3.4E+01	1.3E-05	5.7E-03	6.9E+04	3.3E+01
SVOC	4-Chloroaniline	106-47-8		1.0E+00	2.8E-07			1.6E-05	1.4E-06			3.1E-04			
SVOC	Chrysene	218-01-9	B2	1.0E+00	2.8E-07	7.3E-03	4.9E+03	2.4E-03	2.2E-04	7.3E-03	6.2E+00	3.8E-02	2.1E-03	6.5E+01	5.6E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.0E+00	2.8E-07	7.3E+00	4.9E+00	5.3E-03	4.9E-04	7.3E+00	2.8E-03	1.1E-05	2.1E+00	2.3E+02	2.8E-03
SVOC	Dibenzofuran	132-64-9	D	1.0E+00	2.8E-07			3.6E-04	3.3E-05			9.6E-03			
SVOC	Diethylphthalate	84-66-2	D	1.0E+00	2.8E-07			2.1E-05	2.0E-06			3.5E-04			
SVOC	2,4-Dimethylphenol	105-67-9		1.0E+00	2.8E-07			3.5E-05	3.2E-06			1.9E-03			
SVOC	Di-n-butylphthalate	84-74-2	D	1.0E+00	2.8E-07			3.3E-04	3.1E-05			6.8E-07			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.0E+00	2.8E-07	6.8E-01	5.3E+01	1.1E-05	9.8E-07	6.8E-01	1.5E+01	6.2E-04	1.9E-01	4.3E+01	9.2E+00
SVOC	Di-n-octylphthalate	117-84-0		1.0E+00	2.8E-07			4.7E-03	4.4E-04			2.5E-02			
SVOC	Fluoranthene	206-44-0	D	1.0E+00	2.8E-07			1.3E-03	1.2E-04			1.1E-02			
SVOC	Fluorene	86-73-7	D	1.0E+00	2.8E-07			4.1E-04	3.8E-05			3.4E-02			
SVOC	Hexachlorobenzene	118-74-1	B2	1.0E+00	2.8E-07	1.6E+00	2.2E+01	2.0E-03	1.8E-04	1.6E+00	3.4E-02	6.6E-02	4.6E-01	1.7E-01	2.8E-02
SVOC	Hexachlorobutadiene	87-68-3	C	1.0E+00	2.8E-07	7.8E-02	4.6E+02	5.0E-04	4.6E-05	7.8E-02	2.8E+00	7.3E-02	2.2E-02	3.2E+00	1.5E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.0E+00	2.8E-07	7.3E-01	4.9E+01	5.3E-03	4.9E-04	7.3E-01	2.8E-02	1.1E-03	2.1E-01	2.2E+01	2.8E-02
SVOC	2-Methylnaphthalene	91-57-6	ID	1.0E+00	2.8E-07			2.9E-04	2.7E-05			8.2E-02			
SVOC	Methylphenol (total)	1319-77-3		1.0E+00	2.8E-07			2.2E-05	2.0E-06			8.5E-04			
SVOC	Naphthalene	91-20-3	C	1.0E+00	2.8E-07			1.5E-04	1.4E-05			8.5E-02			
SVOC	Phenanthrene	85-01-8	D	1.0E+00	2.8E-07			5.6E-04	5.2E-05			1.6E-02			
SVOC	Phenol	108-95-2	ID	1.0E+00	2.8E-07			1.2E-05	1.1E-06			4.1E-04			
SVOC	Pyrene	129-00-0	D	1.0E+00	2.8E-07			1.3E-03	1.2E-04			8.0E-03			
P/PCB	PCBs (total)	1336-36-3	B2	1.0E+00	2.8E-07	2.0E+00	1.8E+01	3.3E-03	3.1E-04	2.0E+00	1.6E-02	6.3E-02	5.7E-01	1.4E-01	1.5E-02
INORG	Aluminum	7429-90-5	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Antimony	7440-36-0		1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Arsenic	7440-38-2	A	1.0E+00	2.8E-07	1.5E+00	2.4E+01	2.0E-06	1.8E-07	1.5E+00	3.6E+01		4.3E+00		1.4E+01
INORG	Barium	7440-39-3	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Beryllium	7440-41-7	B1	1.0E+00	2.8E-07			2.0E-06	1.8E-07				2.4E+00		
INORG	Cadmium	7440-43-9	B1	1.0E+00	2.8E-07			2.0E-06	1.8E-07				1.8E+00		
INORG	Chromium (total)	7440-47-3		1.0E+00	2.8E-07			2.0E-06	1.8E-07				1.2E+01		
INORG	Cobalt	7440-48-4	B1	1.0E+00	2.8E-07			8.0E-07	7.4E-08				2.8E+00		
INORG	Copper	7440-50-8	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Cyanide (amenable)	57-12-5A	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Cyanide (total)	57-12-5	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Iron	7439-89-6	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Lead	7439-92-1	B2	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Manganese	7439-96-5	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Mercury	7439-97-6	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07			8.3E-02			
INORG	Nickel	7440-02-0	A	1.0E+00	2.8E-07			4.0E-07	3.7E-08				2.4E-01		
INORG	Selenium	7782-49-2	D	1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Silver	7440-22-4	D	1.0E+00	2.8E-07			1.2E-06	1.1E-07						
INORG	Thallium	7440-28-0		1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Vanadium	7440-62-2		1.0E+00	2.8E-07			2.0E-06	1.8E-07						
INORG	Zinc	7440-66-6	D	1.0E+00	2.8E-07			1.2E-06	1.1E-07						

**Attachment B.8: Risk Based Noncancer Criteria for Exposure of Construction Workers to Groundwater and Spring Water
Bedford, Indiana**

			Pathway:		Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/L)	DA (L/cm ² -event)	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/L)	Combined RBC (mg/L)
VOC	Acetone	67-64-1	ID	1.0E+00	2.0E-06	9.0E-01	4.6E+05	1.3E-06	8.2E-07	9.0E-01	1.1E+06	3.6E-02	3.2E+00	6.3E+03	6.2E+03
VOC	Benzene	71-43-2	A	1.0E+00	2.0E-06	4.0E-03	2.0E+03	3.7E-05	2.4E-05	4.0E-03	1.7E+02	1.3E-01	3.0E-02	1.7E+01	1.5E+01
VOC	Bromodichloromethane	75-27-4	B2	1.0E+00	2.0E-06	2.0E-02	1.0E+04	1.7E-05	1.1E-05	2.0E-02	1.8E+03	8.7E-02	7.0E-02	5.8E+01	5.6E+01
VOC	Bromomethane	74-83-9	D	1.0E+00	2.0E-06	1.4E-03	7.2E+02	7.7E-06	5.0E-06	1.4E-03	2.8E+02	1.2E-01	5.0E-03	3.0E+00	3.0E+00
VOC	2-Butanone	78-93-3	ID	1.0E+00	2.0E-06	6.0E-01	3.1E+05	2.5E-06	1.6E-06	6.0E-01	3.8E+05	4.4E-02	5.0E+00	8.4E+03	8.0E+03
VOC	Carbon Disulfide	75-15-0		1.0E+00	2.0E-06	1.0E-01	5.1E+04	3.1E-05	2.0E-05	1.0E-01	5.0E+03	1.4E-01	7.0E-01	3.7E+02	3.5E+02
VOC	Chlorobenzene	108-90-7	D	1.0E+00	2.0E-06	2.0E-02	1.0E+04	8.0E-05	5.2E-05	2.0E-02	3.9E+02	1.1E-01	6.0E-02	4.0E+01	3.6E+01
VOC	Chloroethane	75-00-3		1.0E+00	2.0E-06	4.0E-01	2.0E+05	1.5E-05	9.6E-06	4.0E-01	4.2E+04	1.5E-01	1.0E+01	5.0E+03	4.4E+03
VOC	Chloroform	67-66-3	B2	1.0E+00	2.0E-06	1.0E-02	5.1E+03	1.9E-05	1.2E-05	1.0E-02	8.3E+02	1.1E-01	5.0E-02	3.4E+01	3.3E+01
VOC	Chloromethane	74-87-3	D	1.0E+00	2.0E-06			7.9E-06	5.1E-06			1.7E-01	9.0E-02	4.0E+01	4.0E+01
VOC	Cumene	98-82-8	D	1.0E+00	2.0E-06	1.0E-01	5.1E+04	2.4E-04	1.6E-04	1.0E-01	6.3E+02	1.1E-01	4.0E-01	2.7E+02	1.9E+02
VOC	Cyclohexane	110-82-7	ID	1.0E+00	2.0E-06			2.3E-04	1.5E-04			1.3E-01	6.0E+00	3.4E+03	3.4E+03
VOC	Dibromochloromethane	124-48-1	C	1.0E+00	2.0E-06	2.0E-02	1.0E+04	1.4E-05	9.2E-06	2.0E-02	2.2E+03	7.3E-02	7.0E-02	7.0E+01	6.7E+01
VOC	1,2-Dichlorobenzene	95-50-1	D	1.0E+00	2.0E-06	9.0E-02	4.6E+04	1.5E-04	9.4E-05	9.0E-02	9.6E+02	9.3E-02	2.0E-01	1.6E+02	1.3E+02
VOC	1,3-Dichlorobenzene	541-73-1	D	1.0E+00	2.0E-06	9.0E-04	4.6E+02	1.4E-04	8.7E-05	9.0E-04	1.0E+01	9.5E-02	1.4E-01	1.1E+02	9.2E+00
VOC	1,4-Dichlorobenzene	106-46-7	C	1.0E+00	2.0E-06	3.0E-02	1.5E+04	1.4E-04	9.3E-05	3.0E-02	3.2E+02	9.4E-02	8.0E-01	6.2E+02	2.1E+02
VOC	Dichlorodifluoromethane	75-71-8		1.0E+00	2.0E-06	2.0E-01	1.0E+05	2.6E-05	1.7E-05	2.0E-01	1.2E+04	1.1E-01	2.0E-01	1.3E+02	1.3E+02
VOC	1,1-Dichloroethane	75-34-3	C	1.0E+00	2.0E-06	1.0E-01	5.1E+04	1.8E-05	1.2E-05	1.0E-01	8.5E+03	1.2E-01	5.0E-01	3.1E+02	3.0E+02
VOC	1,2-Dichloroethane	107-06-2	B2	1.0E+00	2.0E-06	3.0E-02	1.5E+04	1.1E-05	7.3E-06	3.0E-02	4.1E+03	1.1E-01	5.0E-03	3.4E+00	3.4E+00
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.0E+00	2.0E-06	1.0E-02	5.1E+03	2.1E-05	1.3E-05	1.0E-02	7.5E+02	1.2E-01	3.5E-02	2.2E+01	2.1E+01
VOC	trans-1,2-Dichloroethene	156-60-5		1.0E+00	2.0E-06	2.0E-02	1.0E+04	2.8E-05	1.8E-05	2.0E-02	1.1E+03	1.2E-01	7.0E-02	4.3E+01	4.1E+01
VOC	Ethyl Benzene	100-41-4	D	1.0E+00	2.0E-06	1.0E-01	5.1E+04	1.3E-04	8.2E-05	1.0E-01	1.2E+03	1.1E-01	1.0E+00	6.4E+02	4.2E+02
VOC	2-Hexanone	591-78-6		1.0E+00	2.0E-06	4.0E-02	2.0E+04	9.8E-06	6.3E-06	4.0E-02	6.4E+03	1.1E-01	5.0E-03	3.3E+00	3.3E+00
VOC	Methyl Acetate	79-20-9		1.0E+00	2.0E-06	1.0E+00	5.1E+05	2.0E-06	1.3E-06	1.0E+00	7.6E+05	3.1E-03	3.5E+00	8.3E+04	6.5E+04
VOC	Methyl tert-butyl ether	1634-04-4		1.0E+00	2.0E-06			8.8E-06	5.7E-06			1.1E-01	3.0E+00	2.1E+03	2.1E+03
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.0E+00	2.0E-06			7.3E-06	4.7E-06			6.4E-02	3.0E+00	3.4E+03	3.4E+03
VOC	Methylcyclohexane	108-87-2		1.0E+00	2.0E-06			2.6E-04	1.7E-04			1.2E-01	3.0E+00	1.8E+03	1.8E+03
VOC	Methylene Chloride	75-09-2	B2	1.0E+00	2.0E-06	6.0E-02	3.1E+04	9.3E-06	6.0E-06	6.0E-02	1.0E+04	1.2E-01	3.0E+00	1.8E+03	1.4E+03
VOC	Tetrachloroethene	127-18-4	C-B2	1.0E+00	2.0E-06	1.0E-02	5.1E+03	4.0E-05	2.6E-05	1.0E-02	3.9E+02	9.2E-02	4.0E-01	3.2E+02	1.7E+02
VOC	Toluene	108-88-3	D	1.0E+00	2.0E-06	2.0E-01	1.0E+05	8.1E-05	5.2E-05	2.0E-01	3.8E+03	1.2E-01	4.0E-01	2.4E+02	2.2E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.0E+00	2.0E-06	1.0E-02	5.1E+03	2.8E-04	1.8E-04	1.0E-02	5.6E+01	8.2E-02	2.0E-01	1.8E+02	4.2E+01
VOC	1,1,1-Trichloroethane	71-55-6	D	1.0E+00	2.0E-06	2.8E-01	1.4E+05	3.9E-05	2.5E-05	2.8E-01	1.1E+04	1.0E-01	2.2E+00	1.6E+03	1.4E+03
VOC	Trichloroethene	79-01-6	C-B2	1.0E+00	2.0E-06	6.0E-03	3.1E+03	5.5E-05	3.6E-05	6.0E-03	1.7E+02	1.0E-01			1.6E+02
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.0E+00	2.0E-06	3.0E+01	1.5E+07	7.2E-05	4.6E-05	3.0E+01	6.5E+05	8.7E-02	3.0E+01	2.5E+04	2.4E+04
VOC	Vinyl Chloride	75-01-4	A	1.0E+00	2.0E-06	3.0E-03	1.5E+03	1.7E-05	1.1E-05	3.0E-03	2.8E+02	1.5E-01	1.0E-01	4.9E+01	4.0E+01
VOC	Xylenes (total)	1330-20-7	ID	1.0E+00	2.0E-06	2.0E-01	1.0E+05	1.3E-04	8.5E-05	2.0E-01	2.4E+03	1.1E-01	1.0E-01	6.4E+01	6.2E+01
SVOC	Acenaphthene	83-32-9		1.0E+00	2.0E-06	6.0E-02	3.1E+04	3.0E-04	1.9E-04	6.0E-02	3.1E+02	5.6E-02	2.1E-01	2.7E+02	1.5E+02
SVOC	Acenaphthylene	208-96-8	D	1.0E+00	2.0E-06	3.0E-02	1.5E+04	3.8E-04	2.4E-04	3.0E-02	1.2E+02	4.9E-02	1.1E-01	1.6E+02	6.8E+01
SVOC	Acetophenone	98-86-2	D	1.0E+00	2.0E-06	1.0E-01	5.1E+04	1.1E-05	7.1E-06	1.0E-01	1.4E+04	9.3E-03	3.5E-01	2.7E+03	2.2E+03
SVOC	Anthracene	120-12-7	D	1.0E+00	2.0E-06	3.0E-01	1.5E+05	6.4E-04	4.1E-04	3.0E-01	7.2E+02	3.4E-02			7.2E+02
SVOC	Benzaldehyde	100-52-7		1.0E+00	2.0E-06	1.0E-01	5.1E+04	1.1E-05	6.9E-06	1.0E-01	1.4E+04	2.0E-02	3.5E-01	1.3E+03	1.2E+03
SVOC	Benzo(a)anthracene	56-55-3	B2	1.0E+00	2.0E-06			2.4E-03	1.5E-03			2.5E-03			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.0E+00	2.0E-06			3.4E-03	2.2E-03			8.3E-04			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.0E+00	2.0E-06			3.9E-03	2.5E-03			3.9E-02			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.0E+00	2.0E-06	3.0E-02	1.5E+04	5.3E-03	3.4E-03	3.0E-02	8.8E+00	1.0E-04	1.1E-01	7.6E+04	8.8E+00
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.0E+00	2.0E-06			3.9E-03	2.5E-03			6.1E-04			
SVOC	Biphenyl	92-52-4	D	1.0E+00	2.0E-06	5.0E-02	2.6E+04	3.9E-04	2.5E-04	5.0E-02	2.0E+02	7.0E-02	1.8E-01	1.8E+02	9.5E+01
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.0E+00	2.0E-06	2.0E-02	1.0E+04	4.3E-03	2.8E-03	2.0E-02	7.3E+00	6.5E-05			7.3E+00
SVOC	Butylbenzylphthalate	85-68-7	C	1.0E+00	2.0E-06	2.0E-01	1.0E+05	3.8E-04	2.4E-04	2.0E-01	8.2E+02	8.6E-04	7.0E-01	5.9E+04	8.0E+02

**Attachment B.8: Risk Based Noncancer Criteria for Exposure of Construction Workers to Groundwater and Spring Water
Bedford, Indiana**

			Pathway:		Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/L)	DA (L/cm ² -event)	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/L)	Combined RBC (mg/L)
SVOC	Caprolactam	105-60-2		1.0E+00	2.0E-06	5.0E-01	2.6E+05	8.0E-07	5.2E-07	5.0E-01	9.7E+05	2.5E-05	1.8E+00	5.2E+06	1.9E+05
SVOC	Carbazole	86-74-8	B2	1.0E+00	2.0E-06			1.6E-04	1.0E-04			1.3E-05			
SVOC	4-Chloroaniline	106-47-8		1.0E+00	2.0E-06	4.0E-03	2.0E+03	1.6E-05	1.0E-05	4.0E-03	4.0E+02	3.1E-04	1.4E-02	3.3E+03	3.0E+02
SVOC	Chrysene	218-01-9	B2	1.0E+00	2.0E-06			2.4E-03	1.5E-03			3.8E-02			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.0E+00	2.0E-06			5.3E-03	3.4E-03			1.1E-05			
SVOC	Dibenzofuran	132-64-9	D	1.0E+00	2.0E-06	4.0E-03	2.0E+03	3.6E-04	2.3E-04	4.0E-03	1.7E+01	9.6E-03	1.4E-02	1.1E+02	1.5E+01
SVOC	Diethylphthalate	84-66-2	D	1.0E+00	2.0E-06	8.0E-01	4.1E+05	2.1E-05	1.4E-05	8.0E-01	5.8E+04	3.5E-04	2.8E+00	5.9E+05	4.7E+04
SVOC	2,4-Dimethylphenol	105-67-9		1.0E+00	2.0E-06	2.0E-02	1.0E+04	3.5E-05	2.3E-05	2.0E-02	8.8E+02	1.9E-03	7.0E-02	2.7E+03	6.3E+02
SVOC	Di-n-butylphthalate	84-74-2	D	1.0E+00	2.0E-06	1.0E-01	5.1E+04	3.3E-04	2.1E-04	1.0E-01	4.7E+02	6.8E-07			4.6E+02
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.0E+00	2.0E-06	1.0E-03	5.1E+02	1.1E-05	6.9E-06	1.0E-03	1.5E+02	6.2E-04	3.5E-03	4.2E+02	8.9E+01
SVOC	Di-n-octylphthalate	117-84-0		1.0E+00	2.0E-06	4.0E-02	2.0E+04	4.7E-03	3.0E-03	4.0E-02	1.3E+01	2.5E-02			1.3E+01
SVOC	Fluoranthene	206-44-0	D	1.0E+00	2.0E-06	4.0E-02	2.0E+04	1.3E-03	8.4E-04	4.0E-02	4.7E+01	1.1E-02	1.4E-01	9.1E+02	4.5E+01
SVOC	Fluorene	86-73-7	D	1.0E+00	2.0E-06	4.0E-02	2.0E+04	4.1E-04	2.7E-04	4.0E-02	1.5E+02	3.4E-02	1.4E-01	3.0E+02	9.9E+01
SVOC	Hexachlorobenzene	118-74-1	B2	1.0E+00	2.0E-06	8.0E-04	4.1E+02	2.0E-03	1.3E-03	8.0E-04	6.3E-01	6.6E-02			6.3E-01
SVOC	Hexachlorobutadiene	87-68-3	C	1.0E+00	2.0E-06	3.0E-04	1.5E+02	5.0E-04	3.2E-04	3.0E-04	9.2E-01	7.3E-02			9.2E-01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.0E+00	2.0E-06			5.3E-03	3.4E-03			1.1E-03			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.0E+00	2.0E-06	4.0E-03	2.0E+03	2.9E-04	1.9E-04	4.0E-03	2.1E+01	8.2E-02	3.0E-03	2.7E+00	2.4E+00
SVOC	Methylphenol (total)	1319-77-3		1.0E+00	2.0E-06	5.0E-02	2.6E+04	2.2E-05	1.4E-05	5.0E-02	3.5E+03	8.5E-04	1.8E-01	1.5E+04	2.6E+03
SVOC	Naphthalene	91-20-3	C	1.0E+00	2.0E-06	2.0E-02	1.0E+04	1.5E-04	9.6E-05	2.0E-02	2.1E+02	8.5E-02	3.0E-03	2.6E+00	2.5E+00
SVOC	Phenanthrene	85-01-8	D	1.0E+00	2.0E-06	3.0E-02	1.5E+04	5.6E-04	3.6E-04	3.0E-02	8.3E+01	1.6E-02	1.1E-01	4.8E+02	7.1E+01
SVOC	Phenol	108-95-2	ID	1.0E+00	2.0E-06	3.0E-01	1.5E+05	1.2E-05	7.7E-06	3.0E-01	3.9E+04	4.1E-04			3.1E+04
SVOC	Pyrene	129-00-0	D	1.0E+00	2.0E-06	3.0E-02	1.5E+04	1.3E-03	8.3E-04	3.0E-02	3.6E+01	8.0E-03	1.1E-01	9.6E+02	3.5E+01
P/PCB	PCBs (total)	1336-36-3	B2	1.0E+00	2.0E-06	2.0E-05	1.0E+01	3.3E-03	2.1E-03	2.0E-05	9.4E-03	6.3E-02			9.4E-03
INORG	Aluminum	7429-90-5	D	1.0E+00	2.0E-06	1.0E+00	5.1E+05	2.0E-06	1.3E-06	1.0E+00	7.7E+05		5.0E-03		3.1E+05
INORG	Antimony	7440-36-0		1.0E+00	2.0E-06	4.0E-04	2.0E+02	2.0E-06	1.3E-06	6.0E-05	4.6E+01		1.4E-03		3.8E+01
INORG	Arsenic	7440-38-2	A	1.0E+00	2.0E-06	3.0E-04	1.5E+02	2.0E-06	1.3E-06	3.0E-04	2.3E+02				9.2E+01
INORG	Barium	7440-39-3	D	1.0E+00	2.0E-06	7.0E-02	3.6E+04	2.0E-06	1.3E-06	7.0E-02	5.4E+04				2.2E+04
INORG	Beryllium	7440-41-7	B1	1.0E+00	2.0E-06	2.0E-03	1.0E+03	2.0E-06	1.3E-06	1.4E-05	1.1E+01		2.0E-05		1.1E+01
INORG	Cadmium	7440-43-9	B1	1.0E+00	2.0E-06	5.0E-04	2.6E+02	2.0E-06	1.3E-06	2.5E-05	1.9E+01		2.0E-04		1.8E+01
INORG	Chromium (total)	7440-47-3		1.0E+00	2.0E-06	3.0E-03	1.5E+03	2.0E-06	1.3E-06	7.5E-05	5.8E+01				5.6E+01
INORG	Cobalt	7440-48-4	B1	1.0E+00	2.0E-06	2.0E-02	1.0E+04	8.0E-07	5.2E-07	2.0E-02	3.9E+04		2.0E-05		8.1E+03
INORG	Copper	7440-50-8	D	1.0E+00	2.0E-06	4.0E-02	2.0E+04	2.0E-06	1.3E-06	4.0E-02	3.1E+04		1.4E-01		1.2E+04
INORG	Cyanide (amenable)	57-12-5A	D	1.0E+00	2.0E-06	2.0E-02	1.0E+04	2.0E-06	1.3E-06	2.0E-02	1.5E+04		7.0E-02		6.2E+03
INORG	Cyanide (total)	57-12-5	D	1.0E+00	2.0E-06	2.0E-02	1.0E+04	2.0E-06	1.3E-06	2.0E-02	1.5E+04		7.0E-02		6.2E+03
INORG	Iron	7439-89-6	D	1.0E+00	2.0E-06	3.0E-01	1.5E+05	2.0E-06	1.3E-06	3.0E-01	2.3E+05				9.2E+04
INORG	Lead	7439-92-1	B2	1.0E+00	2.0E-06			2.0E-06	1.3E-06						
INORG	Manganese	7439-96-5	D	1.0E+00	2.0E-06	1.4E-01	7.2E+04	2.0E-06	1.3E-06	5.6E-03	4.3E+03		5.0E-05		4.1E+03
INORG	Mercury	7439-97-6	D	1.0E+00	2.0E-06	3.0E-04	1.5E+02	2.0E-06	1.3E-06	2.1E-05	1.6E+01	8.3E-02	3.0E-04	2.6E-01	2.6E-01
INORG	Nickel	7440-02-0	A	1.0E+00	2.0E-06	2.0E-02	1.0E+04	4.0E-07	2.6E-07	8.0E-04	3.1E+03				2.4E+03
INORG	Selenium	7782-49-2	D	1.0E+00	2.0E-06	5.0E-03	2.6E+03	2.0E-06	1.3E-06	5.0E-03	3.9E+03		1.8E-02		1.5E+03
INORG	Silver	7440-22-4	D	1.0E+00	2.0E-06	5.0E-03	2.6E+03	1.2E-06	7.7E-07	2.0E-04	2.6E+02		1.0E-05		2.3E+02
INORG	Thallium	7440-28-0		1.0E+00	2.0E-06	7.0E-05	3.6E+01	2.0E-06	1.3E-06	7.0E-05	5.4E+01		2.5E-04		2.2E+01
INORG	Vanadium	7440-62-2		1.0E+00	2.0E-06	7.0E-03	3.6E+03	2.0E-06	1.3E-06	1.8E-04	1.4E+02		2.5E-02		1.4E+02
INORG	Zinc	7440-66-6	D	1.0E+00	2.0E-06	3.0E-01	1.5E+05	1.2E-06	7.7E-07	3.0E-01	3.9E+05		1.1E+00		1.1E+05

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Exposure of Trespassers to On-Site Surface Water

**Attachment B.9: Upper-Bound Estimates of Risk and HQ for Trespasser Exposure to On-Site Surface Water
GM Powertrain Bedford Facility, Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surface Water Conc (mg/L)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
P201(GM)	P/PCB	PCBs (total)	1336-36-3	B2	1	1	7.23E-04	2.9E-03	1.7E-03	2.5E-06	4.3E-01
Note:											
1. Only constituents detected at each area are shown.											
2. Carc class - EPA Weight-of-Evidence Cancer Classification											

**Attachment B.9: Nonsteady State Dermal Absorption of Chemicals from Spring and Surface Water
Bedford, Indiana**

Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
VOC	Acetone	67-64-1	5.8E+01	-2.4E-01	5.2E-04	1.5E-03	2.2E-01	3.3E-01	3.0E-01	5.3E-01	1.0E+00	7.51E-07
VOC	Benzene	71-43-2	7.8E+01	2.1E+00	1.5E-02	5.0E-02	2.9E-01	3.7E-01	3.3E-01	6.9E-01	1.0E+00	2.29E-05
VOC	Bromodichloromethane	75-27-4	1.6E+02	2.1E+00	4.7E-03	2.3E-02	8.7E-01	3.5E-01	3.2E-01	2.1E+00	1.0E+00	1.20E-05
VOC	Bromomethane	74-83-9	9.5E+01	1.2E+00	2.8E-03	1.1E-02	3.6E-01	3.4E-01	3.1E-01	8.6E-01	1.0E+00	4.87E-06
VOC	2-Butanone	78-93-3	7.2E+01	2.9E-01	9.7E-04	3.2E-03	2.7E-01	3.4E-01	3.1E-01	6.4E-01	1.0E+00	1.49E-06
VOC	Carbon Disulfide	75-15-0	7.6E+01	2.0E+00	1.2E-02	4.2E-02	2.8E-01	3.6E-01	3.3E-01	6.7E-01	1.0E+00	1.92E-05
VOC	Chlorobenzene	108-90-7	1.1E+02	2.9E+00	2.9E-02	1.2E-01	4.5E-01	4.2E-01	3.8E-01	1.1E+00	1.0E+00	5.31E-05
VOC	Chloroethane	75-00-3	6.5E+01	1.4E+00	6.1E-03	1.9E-02	2.4E-01	3.5E-01	3.1E-01	5.8E-01	1.0E+00	8.93E-06
VOC	Chloroform	67-66-3	1.2E+02	1.9E+00	6.3E-03	2.6E-02	4.9E-01	3.5E-01	3.2E-01	1.2E+00	1.0E+00	1.22E-05
VOC	Chloromethane	74-87-3	5.0E+01	9.1E-01	3.3E-03	9.0E-03	2.0E-01	3.4E-01	3.1E-01	4.8E-01	1.0E+00	4.61E-06
VOC	Cumene	98-82-8	1.2E+02	3.7E+00	8.8E-02	3.7E-01	5.0E-01	6.1E-01	5.8E-01	1.2E+00	1.0E+00	1.70E-04
VOC	Cyclohexane	110-82-7	8.4E+01	3.4E+00	1.0E-01	3.5E-01	3.1E-01	6.0E-01	5.7E-01	7.5E-01	1.0E+00	1.56E-04
VOC	Dibromochloromethane	124-48-1	2.1E+02	2.2E+00	2.9E-03	1.6E-02	1.5E+00	3.4E-01	3.1E-01	3.7E+00	1.0E+00	1.00E-05
VOC	1,2-Dichlorobenzene	95-50-1	1.5E+02	3.4E+00	4.4E-02	2.0E-01	7.0E-01	4.8E-01	4.4E-01	1.7E+00	1.0E+00	1.01E-04
VOC	1,3-Dichlorobenzene	541-73-1	1.5E+02	3.4E+00	4.1E-02	1.9E-01	7.0E-01	4.7E-01	4.3E-01	1.7E+00	1.0E+00	9.37E-05
VOC	1,4-Dichlorobenzene	106-46-7	1.5E+02	3.4E+00	4.3E-02	2.0E-01	7.0E-01	4.8E-01	4.4E-01	1.7E+00	1.0E+00	9.96E-05
VOC	Dichlorodifluoromethane	75-71-8	1.2E+02	2.2E+00	8.9E-03	3.8E-02	5.0E-01	3.6E-01	3.3E-01	1.2E+00	1.0E+00	1.74E-05
VOC	1,1-Dichloroethane	75-34-3	9.9E+01	1.8E+00	6.7E-03	2.6E-02	3.8E-01	3.5E-01	3.2E-01	9.0E-01	1.0E+00	1.17E-05
VOC	1,2-Dichloroethane	107-06-2	9.9E+01	1.5E+00	4.1E-03	1.6E-02	3.8E-01	3.4E-01	3.1E-01	9.0E-01	1.0E+00	7.23E-06
VOC	cis-1,2-Dichloroethene	156-59-2	9.7E+01	1.9E+00	7.7E-03	2.9E-02	3.7E-01	3.5E-01	3.2E-01	8.8E-01	1.0E+00	1.32E-05
VOC	trans-1,2-Dichloroethene	156-60-5	9.7E+01	2.1E+00	1.1E-02	4.0E-02	3.7E-01	3.6E-01	3.3E-01	8.8E-01	1.0E+00	1.82E-05
VOC	Ethyl Benzene	100-41-4	1.1E+02	3.1E+00	4.8E-02	1.9E-01	4.1E-01	4.7E-01	4.3E-01	9.9E-01	1.0E+00	8.67E-05
VOC	2-Hexanone	591-78-6	1.0E+02	1.4E+00	3.5E-03	1.4E-02	3.8E-01	3.4E-01	3.1E-01	9.2E-01	1.0E+00	6.25E-06
VOC	Methyl Acetate	79-20-9	7.4E+01	1.8E-01	8.0E-04	2.7E-03	2.7E-01	3.4E-01	3.0E-01	6.6E-01	1.0E+00	1.24E-06
VOC	Methyl tert-butyl ether	1634-04-4	8.8E+01	1.2E+00	3.3E-03	1.2E-02	3.3E-01	3.4E-01	3.1E-01	7.9E-01	1.0E+00	5.53E-06
VOC	4-Methyl-2-pentanone	108-10-1	1.0E+02	1.2E+00	2.7E-03	1.0E-02	3.8E-01	3.4E-01	3.1E-01	9.2E-01	1.0E+00	4.69E-06
VOC	Methylcyclohexane	108-87-2	9.8E+01	3.6E+00	1.1E-01	4.1E-01	3.7E-01	6.5E-01	6.2E-01	9.0E-01	1.0E+00	1.87E-04
VOC	Methylene Chloride	75-09-2	8.5E+01	1.3E+00	3.5E-03	1.3E-02	3.1E-01	3.4E-01	3.1E-01	7.5E-01	1.0E+00	5.76E-06
VOC	Tetrachloroethene	127-18-4	1.7E+02	2.7E+00	1.1E-02	5.4E-02	8.9E-01	3.7E-01	3.4E-01	2.1E+00	1.0E+00	2.82E-05
VOC	Toluene	108-88-3	9.2E+01	2.8E+00	3.2E-02	1.2E-01	3.5E-01	4.2E-01	3.8E-01	8.3E-01	1.0E+00	5.25E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	1.8E+02	4.0E+00	6.8E-02	3.5E-01	1.1E+00	6.0E-01	5.6E-01	2.6E+00	1.0E+00	1.95E-04
VOC	1,1,1-Trichloroethane	71-55-6	1.3E+02	2.5E+00	1.2E-02	5.5E-02	5.9E-01	3.7E-01	3.4E-01	1.4E+00	1.0E+00	2.60E-05
VOC	Trichloroethene	79-01-6	1.3E+02	2.7E+00	1.8E-02	7.9E-02	5.7E-01	3.9E-01	3.5E-01	1.4E+00	1.0E+00	3.74E-05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.9E+02	3.1E+00	1.7E-02	8.9E-02	1.2E+00	3.9E-01	3.6E-01	2.8E+00	1.0E+00	5.06E-05
VOC	Vinyl Chloride	75-01-4	6.3E+01	1.5E+00	6.9E-03	2.1E-02	2.4E-01	3.5E-01	3.2E-01	5.7E-01	1.0E+00	1.01E-05
VOC	Xylenes (total)	1330-20-7	1.1E+02	3.2E+00	5.0E-02	2.0E-01	4.1E-01	4.8E-01	4.4E-01	9.9E-01	1.0E+00	9.03E-05
SVOC	Acenaphthene	83-32-9	1.5E+02	3.9E+00	8.4E-02	4.0E-01	7.7E-01	6.4E-01	6.1E-01	1.8E+00	1.0E+00	2.03E-04
SVOC	Acenaphthylene	208-96-8	1.5E+02	4.1E+00	1.1E-01	5.1E-01	7.5E-01	7.3E-01	7.2E-01	1.8E+00	1.0E+00	2.59E-04
SVOC	Acetophenone	98-86-2	1.2E+02	1.6E+00	3.7E-03	1.6E-02	5.0E-01	3.4E-01	3.1E-01	1.2E+00	1.0E+00	7.22E-06
SVOC	Anthracene	120-12-7	1.8E+02	4.6E+00	1.6E-01	8.2E-01	1.0E+00	1.0E+00	1.1E+00	4.0E+00	1.0E+00	4.53E-04
SVOC	Benzaldehyde	100-52-7	1.1E+02	1.5E+00	3.8E-03	1.5E-02	4.1E-01	3.4E-01	3.1E-01	9.9E-01	1.0E+00	6.97E-06
SVOC	Benzo(a)anthracene	56-55-3	2.3E+02	5.7E+00	4.8E-01	2.8E+00	2.0E+00	2.9E+00	6.3E+00	8.4E+00	9.0E-01	1.70E-03
SVOC	Benzo(a)pyrene	50-32-8	2.5E+02	6.1E+00	6.6E-01	4.0E+00	2.7E+00	4.1E+00	1.2E+01	1.2E+01	8.0E-01	2.41E-03

**Attachment B.9: Nonsteady State Dermal Absorption of Chemicals from Spring and Surface Water
Bedford, Indiana**

Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
SVOC	Benzo(b)fluoranthene	205-99-2	2.5E+02	6.2E+00	7.6E-01	4.6E+00	2.7E+00	4.7E+00	1.5E+01	1.2E+01	8.0E-01	2.76E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	2.8E+02	7.2E+00	1.0E+00	6.4E+00	3.7E+00	6.4E+00	2.8E+01	1.6E+01	7.0E-01	3.73E-03
SVOC	Benzo(k)fluoranthene	207-08-9	2.5E+02	6.2E+00	7.6E-01	4.6E+00	2.7E+00	4.7E+00	1.5E+01	1.2E+01	8.0E-01	2.76E-03
SVOC	Biphenyl	92-52-4	1.5E+02	4.1E+00	1.1E-01	5.2E-01	7.7E-01	7.4E-01	7.3E-01	1.8E+00	1.0E+00	2.63E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	3.9E+02	7.3E+00	6.8E-01	5.1E+00	1.6E+01	5.2E+00	1.9E+01	7.1E+01	4.0E-01	3.01E-03
SVOC	Butylbenzylphthalate	85-68-7	3.1E+02	4.8E+00	4.4E-02	3.0E-01	5.9E+00	5.6E-01	5.2E-01	1.4E+01	9.0E-01	2.67E-04
SVOC	Caprolactam	105-60-2	1.1E+02	-1.9E-01	2.8E-04	1.1E-03	4.5E-01	3.3E-01	3.0E-01	1.1E+00	1.0E+00	5.13E-07
SVOC	Carbazole	86-74-8	1.7E+02	3.6E+00	4.3E-02	2.1E-01	9.1E-01	4.9E-01	4.5E-01	2.2E+00	1.0E+00	1.13E-04
SVOC	4-Chloroaniline	106-47-8	1.3E+02	1.9E+00	5.1E-03	2.2E-02	5.4E-01	3.5E-01	3.2E-01	1.3E+00	1.0E+00	1.04E-05
SVOC	Chrysene	218-01-9	2.3E+02	5.7E+00	4.8E-01	2.8E+00	2.0E+00	2.9E+00	6.3E+00	8.4E+00	9.0E-01	1.70E-03
SVOC	Dibenz(a,h)anthracene	53-70-3	2.8E+02	6.7E+00	1.0E+00	6.4E+00	3.8E+00	6.5E+00	2.9E+01	1.7E+01	7.0E-01	3.78E-03
SVOC	Dibenzofuran	132-64-9	1.7E+02	4.1E+00	9.5E-02	4.7E-01	9.2E-01	7.0E-01	6.8E-01	2.2E+00	1.0E+00	2.52E-04
SVOC	Diethylphthalate	84-66-2	2.2E+02	2.5E+00	4.0E-03	2.3E-02	1.8E+00	3.5E-01	3.2E-01	4.4E+00	1.0E+00	1.51E-05
SVOC	2,4-Dimethylphenol	105-67-9	1.2E+02	2.4E+00	1.2E-02	5.0E-02	5.1E-01	3.7E-01	3.3E-01	1.2E+00	1.0E+00	2.33E-05
SVOC	Di-n-butylphthalate	84-74-2	2.8E+02	4.6E+00	4.8E-02	3.1E-01	3.8E+00	5.6E-01	5.3E-01	9.1E+00	9.0E-01	2.34E-04
SVOC	2,6-Dinitrotoluene	606-20-2	1.8E+02	1.9E+00	2.6E-03	1.3E-02	1.1E+00	3.4E-01	3.1E-01	2.6E+00	1.0E+00	7.53E-06
SVOC	Di-n-octylphthalate	117-84-0	3.9E+02	8.1E+00	1.0E+00	7.6E+00	1.6E+01	7.6E+00	3.9E+01	7.2E+01	3.0E-01	3.34E-03
SVOC	Fluoranthene	206-44-0	2.0E+02	5.1E+00	2.8E-01	1.5E+00	1.4E+00	1.7E+00	2.4E+00	5.7E+00	1.0E+00	9.23E-04
SVOC	Fluorene	86-73-7	1.7E+02	4.2E+00	1.1E-01	5.5E-01	9.0E-01	7.7E-01	7.7E-01	2.2E+00	1.0E+00	2.92E-04
SVOC	Hexachlorobenzene	118-74-1	2.8E+02	5.9E+00	3.1E-01	2.0E+00	4.1E+00	2.1E+00	3.7E+00	1.7E+01	8.0E-01	1.40E-03
SVOC	Hexachlorobutadiene	87-68-3	2.6E+02	4.8E+00	8.2E-02	5.1E-01	3.0E+00	7.3E-01	7.2E-01	7.3E+00	9.0E-01	3.56E-04
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2.8E+02	6.7E+00	1.0E+00	6.4E+00	3.7E+00	6.4E+00	2.8E+01	1.6E+01	7.0E-01	3.73E-03
SVOC	2-Methylnaphthalene	91-57-6	1.4E+02	3.9E+00	8.9E-02	4.1E-01	6.6E-01	6.5E-01	6.2E-01	1.6E+00	1.0E+00	2.00E-04
SVOC	Methylphenol (total)	1319-77-3	1.1E+02		7.8E-03	3.1E-02	4.2E-01	3.5E-01	3.2E-01	1.0E+00	1.0E+00	1.40E-05
SVOC	Naphthalene	91-20-3	1.3E+02	3.4E+00	5.0E-02	2.2E-01	5.5E-01	4.9E-01	4.5E-01	1.3E+00	1.0E+00	1.03E-04
SVOC	Phenanthrene	85-01-8	1.8E+02	4.5E+00	1.4E-01	7.2E-01	1.0E+00	9.1E-01	9.7E-01	4.1E+00	1.0E+00	3.95E-04
SVOC	Phenol	108-95-2	9.4E+01	1.5E+00	4.5E-03	1.7E-02	3.5E-01	3.4E-01	3.1E-01	8.5E-01	1.0E+00	7.60E-06
SVOC	Pyrene	129-00-0	2.0E+02	5.1E+00	2.8E-01	1.5E+00	1.4E+00	1.6E+00	2.4E+00	5.7E+00	1.0E+00	9.09E-04
P/PCB	PCBs (total)	1336-36-3	3.3E+02	6.5E+00	4.5E-01	3.1E+00	7.2E+00	3.2E+00	7.7E+00	3.1E+01	7.0E-01	2.34E-03
INORG	Aluminum	7429-90-5	2.7E+01		1.0E-03							1.00E-06
INORG	Antimony	7440-36-0	1.2E+02		1.0E-03							1.00E-06
INORG	Arsenic	7440-38-2	7.5E+01		1.0E-03							1.00E-06
INORG	Barium	7440-39-3	1.4E+02		1.0E-03							1.00E-06
INORG	Beryllium	7440-41-7	9.0E+00		1.0E-03							1.00E-06
INORG	Cadmium	7440-43-9	1.1E+02		1.0E-03							1.00E-06
INORG	Chromium (total)	7440-47-3	5.2E+01		1.0E-03							1.00E-06
INORG	Cobalt	7440-48-4	5.9E+01		4.0E-04							4.00E-07
INORG	Copper	7440-50-8	6.4E+01		1.0E-03							1.00E-06
INORG	Cyanide (amenable)	57-12-5A	2.6E+01		1.0E-03							1.00E-06
INORG	Cyanide (total)	57-12-5	2.6E+01		1.0E-03							1.00E-06
INORG	Iron	7439-89-6	5.6E+01		1.0E-03							1.00E-06
INORG	Lead	7439-92-1	2.1E+02		1.0E-03							1.00E-06
INORG	Manganese	7439-96-5	5.5E+01		1.0E-03							1.00E-06

Attachment B.9: Nonsteady State Dermal Absorption of Chemicals from Spring and Surface Water Bedford, Indiana												
Chem Group	Chemical	CASRN	MW (g/mole)	Log K _{ow} (unitless)	K _p (cm/hr)	B (unitless)	τ (hr)	c	b	ts (hr)	FA (unitless)	DA (L/cm ² -event)
INORG	Mercury	7439-97-6	2.0E+02		1.0E-03							1.00E-06
INORG	Nickel	7440-02-0	5.9E+01		2.0E-04							2.00E-07
INORG	Selenium	7782-49-2	7.9E+01		1.0E-03							1.00E-06
INORG	Silver	7440-22-4	1.1E+02		6.0E-04							6.00E-07
INORG	Thallium	7440-28-0	2.0E+02		1.0E-03							1.00E-06
INORG	Vanadium	7440-62-2	5.1E+01		1.0E-03							1.00E-06
INORG	Zinc	7440-66-6	6.5E+01		6.0E-04							6.00E-07
Note:	Event Time (Recreational User)	hours	t	1								

**Attachment B.9: Vapor Flux (mg/m²-s per mg/L) from Spring and Surface Water
Bedford, Indiana**

Analyte Group	Chemical	CASRN	H (unitless)	D _{air} (cm ² /s)	D _{water} (cm ² /s)	Sc _L (unitless)	Sc _G (unitless)	k _L (m/s)	k _G (m/s)	K _L (m/s)	J _L (mg/m ² -s)
VOC	Acetone	67-64-1	1.59E-03	1.24E-01	1.14E-05	7.83E+02	1.22E+00	5.60E-06	8.46E-03	3.95E-06	3.65E-03
VOC	Benzene	71-43-2	2.28E-01	8.80E-02	9.80E-06	9.11E+02	1.71E+00	5.06E-06	6.72E-03	5.05E-06	4.56E-03
VOC	Bromodichloromethane	75-27-4	6.56E-02	2.98E-02	1.06E-05	8.42E+02	5.06E+00	5.33E-06	3.25E-03	5.20E-06	4.69E-03
VOC	Bromomethane	74-83-9	2.56E-01	7.28E-02	1.21E-05	7.38E+02	2.07E+00	5.83E-06	5.92E-03	5.80E-06	5.17E-03
VOC	2-Butanone	78-93-3	2.28E-03	9.49E-02	9.80E-06	9.11E+02	1.59E+00	5.06E-06	7.07E-03	3.85E-06	3.56E-03
VOC	Carbon Disulfide	75-15-0	1.24E+00	1.04E-01	1.00E-05	8.93E+02	1.45E+00	5.13E-06	7.52E-03	5.13E-06	4.63E-03
VOC	Chlorobenzene	108-90-7	1.52E-01	7.30E-02	8.70E-06	1.03E+03	2.07E+00	4.68E-06	5.93E-03	4.65E-06	4.23E-03
VOC	Chloroethane	75-00-3	3.60E-01	1.10E-01	1.53E-05	5.84E+02	1.37E+00	6.81E-06	7.81E-03	6.80E-06	5.94E-03
VOC	Chloroform	67-66-3	1.50E-01	1.04E-01	1.00E-05	8.93E+02	1.45E+00	5.13E-06	7.52E-03	5.11E-06	4.61E-03
VOC	Chloromethane	74-87-3	3.60E-01	1.26E-01	6.50E-06	1.37E+03	1.20E+00	3.85E-06	8.55E-03	3.85E-06	3.56E-03
VOC	Cumene	98-82-8	4.74E+01	6.50E-02	7.83E-06	1.14E+03	2.32E+00	4.36E-06	5.49E-03	4.36E-06	3.99E-03
VOC	Cyclohexane	110-82-7	7.97E+00	1.10E-01	9.14E-06	9.77E+02	1.37E+00	4.83E-06	7.81E-03	4.83E-06	4.38E-03
VOC	Dibromochloromethane	124-48-1	3.21E-02	1.96E-02	1.05E-05	8.50E+02	7.70E+00	5.30E-06	2.46E-03	4.97E-06	4.49E-03
VOC	1,2-Dichlorobenzene	95-50-1	7.79E-02	6.90E-02	7.90E-06	1.13E+03	2.19E+00	4.38E-06	5.71E-03	4.34E-06	3.98E-03
VOC	1,3-Dichlorobenzene	541-73-1	1.27E-01	4.14E-02	8.85E-06	1.01E+03	3.64E+00	4.73E-06	4.06E-03	4.69E-06	4.26E-03
VOC	1,4-Dichlorobenzene	106-46-7	9.96E-02	6.90E-02	7.90E-06	1.13E+03	2.19E+00	4.38E-06	5.71E-03	4.35E-06	3.98E-03
VOC	Dichlorodifluoromethane	75-71-8	1.40E+01	8.00E-02	8.00E-06	1.12E+03	1.89E+00	4.42E-06	6.31E-03	4.42E-06	4.04E-03
VOC	1,1-Dichloroethane	75-34-3	2.30E-01	7.42E-02	1.05E-05	8.50E+02	2.03E+00	5.30E-06	6.00E-03	5.28E-06	4.75E-03
VOC	1,2-Dichloroethane	107-06-2	4.01E-02	1.04E-01	9.90E-06	9.02E+02	1.45E+00	5.10E-06	7.52E-03	5.01E-06	4.53E-03
VOC	cis-1,2-Dichloroethene	156-59-2	1.67E-01	7.36E-02	1.13E-05	7.90E+02	2.05E+00	5.57E-06	5.96E-03	5.54E-06	4.95E-03
VOC	trans-1,2-Dichloroethene	156-60-5	3.85E-01	7.07E-02	1.19E-05	7.50E+02	2.13E+00	5.76E-06	5.81E-03	5.75E-06	5.12E-03
VOC	Ethyl Benzene	100-41-4	3.23E-01	7.50E-02	7.80E-06	1.14E+03	2.01E+00	4.35E-06	6.04E-03	4.34E-06	3.97E-03
VOC	2-Hexanone	591-78-6	7.15E-02	1.35E-01	1.03E-05	8.67E+02	1.12E+00	5.23E-06	8.94E-03	5.19E-06	4.68E-03
VOC	Methyl Acetate	79-20-9	1.15E-04	1.23E-01	1.10E-05	8.12E+02	1.23E+00	5.47E-06	8.40E-03	8.21E-07	8.07E-04
VOC	Methyl tert-butyl ether	1634-04-4	2.40E-02	8.59E-02	1.01E-05	8.84E+02	1.76E+00	5.17E-06	6.62E-03	5.00E-06	4.52E-03
VOC	4-Methyl-2-pentanone	108-10-1	5.64E-03	7.50E-02	7.80E-06	1.14E+03	2.01E+00	4.35E-06	6.04E-03	3.86E-06	3.56E-03
VOC	Methylcyclohexane	108-87-2	1.76E+01	9.86E-02	8.52E-06	1.05E+03	1.53E+00	4.61E-06	7.26E-03	4.61E-06	4.20E-03
VOC	Methylene Chloride	75-09-2	8.98E-02	1.01E-01	1.17E-05	7.63E+02	1.49E+00	5.70E-06	7.37E-03	5.65E-06	5.05E-03
VOC	Tetrachloroethene	127-18-4	7.54E-01	7.20E-02	8.20E-06	1.09E+03	2.09E+00	4.50E-06	5.88E-03	4.49E-06	4.10E-03
VOC	Toluene	108-88-3	2.72E-01	8.70E-02	8.60E-06	1.04E+03	1.73E+00	4.64E-06	6.67E-03	4.63E-06	4.22E-03
VOC	1,2,4-Trichlorobenzene	120-82-1	5.82E-02	3.00E-02	8.23E-06	1.09E+03	5.03E+00	4.51E-06	3.27E-03	4.40E-06	4.03E-03
VOC	1,1,1-Trichloroethane	71-55-6	7.05E-01	7.80E-02	8.80E-06	1.01E+03	1.93E+00	4.71E-06	6.20E-03	4.71E-06	4.28E-03
VOC	Trichloroethene	79-01-6	4.22E-01	7.90E-02	9.10E-06	9.81E+02	1.91E+00	4.82E-06	6.25E-03	4.81E-06	4.36E-03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.97E+01	7.80E-02	8.20E-06	1.09E+03	1.93E+00	4.50E-06	6.20E-03	4.49E-06	4.10E-03
VOC	Vinyl Chloride	75-01-4	1.11E+00	1.06E-01	1.23E-05	7.26E+02	1.42E+00	5.89E-06	7.62E-03	5.89E-06	5.23E-03
VOC	Xylenes (total)	1330-20-7	2.76E-01	7.80E-02	8.75E-06	1.02E+03	1.93E+00	4.69E-06	6.20E-03	4.68E-06	4.26E-03
SVOC	Acenaphthene	83-32-9	6.36E-03	4.21E-02	7.69E-06	1.16E+03	3.58E+00	4.31E-06	4.10E-03	3.70E-06	3.43E-03
SVOC	Acenaphthylene	208-96-8	4.62E-03	4.42E-02	7.44E-06	1.20E+03	3.41E+00	4.21E-06	4.24E-03	3.47E-06	3.23E-03
SVOC	Acetophenone	98-86-2	4.37E-04	8.00E-02	8.00E-06	1.12E+03	1.89E+00	4.42E-06	6.31E-03	1.70E-06	1.64E-03
SVOC	Anthracene	120-12-7	2.67E-03	3.24E-02	7.74E-06	1.15E+03	4.66E+00	4.33E-06	3.44E-03	2.94E-06	2.77E-03

**Attachment B.9: Vapor Flux (mg/m²-s per mg/L) from Spring and Surface Water
Bedford, Indiana**

Analyte Group	Chemical	CASRN	H (unitless)	D _{air} (cm ² /s)	D _{water} (cm ² /s)	Sc _L (unitless)	Sc _G (unitless)	k _L (m/s)	k _G (m/s)	K _L (m/s)	J _L (mg/m ² -s)
SVOC	Benzaldehyde	100-52-7	9.73E-04	7.21E-02	9.07E-06	9.85E+02	2.09E+00	4.81E-06	5.88E-03	2.61E-06	2.48E-03
SVOC	Benzo(a)anthracene	56-55-3	1.37E-04	5.10E-02	9.00E-06	9.92E+02	2.96E+00	4.78E-06	4.66E-03	5.64E-07	5.57E-04
SVOC	Benzo(a)pyrene	50-32-8	4.63E-05	4.30E-02	9.00E-06	9.92E+02	3.51E+00	4.78E-06	4.16E-03	1.85E-07	1.84E-04
SVOC	Benzo(b)fluoranthene	205-99-2	4.55E-03	2.26E-02	5.56E-06	1.61E+03	6.67E+00	3.47E-06	2.70E-03	2.71E-06	2.56E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	5.76E-06	2.03E-02	5.20E-06	1.72E+03	7.43E+00	3.32E-06	2.52E-03	1.44E-08	1.44E-05
SVOC	Benzo(k)fluoranthene	207-08-9	3.40E-05	2.26E-02	5.56E-06	1.61E+03	6.67E+00	3.47E-06	2.70E-03	8.96E-08	8.94E-05
SVOC	Biphenyl	92-52-4	1.23E-02	4.04E-02	8.15E-06	1.10E+03	3.73E+00	4.48E-06	3.99E-03	4.10E-06	3.77E-03
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	4.18E-06	3.51E-02	3.66E-06	2.44E+03	4.30E+00	2.63E-06	3.63E-03	1.51E-08	1.51E-05
SVOC	Butylbenzylphthalate	85-68-7	5.17E-05	1.74E-02	4.83E-06	1.85E+03	8.67E+00	3.16E-06	2.27E-03	1.13E-07	1.13E-04
SVOC	Caprolactam	105-60-2	1.03E-06	6.54E-02	8.99E-06	9.93E+02	2.31E+00	4.78E-06	5.51E-03	5.69E-09	5.69E-06
SVOC	Carbazole	86-74-8	6.26E-07	3.90E-02	7.03E-06	1.27E+03	3.87E+00	4.06E-06	3.90E-03	2.44E-09	2.44E-06
SVOC	4-Chloroaniline	106-47-8	1.36E-05	4.83E-02	1.01E-05	8.84E+02	3.12E+00	5.17E-06	4.50E-03	6.05E-08	6.04E-05
SVOC	Chrysene	218-01-9	3.88E-03	2.48E-02	6.21E-06	1.44E+03	6.08E+00	3.73E-06	2.88E-03	2.80E-06	2.64E-03
SVOC	Dibenz(a,h)anthracene	53-70-3	6.03E-07	2.02E-02	5.18E-06	1.72E+03	7.47E+00	3.31E-06	2.51E-03	1.51E-09	1.51E-06
SVOC	Dibenzofuran	132-64-9	5.15E-04	2.70E-02	5.93E-06	1.51E+03	5.59E+00	3.62E-06	3.05E-03	1.09E-06	1.07E-03
SVOC	Diethylphthalate	84-66-2	1.85E-05	2.56E-02	6.35E-06	1.41E+03	5.89E+00	3.79E-06	2.94E-03	5.36E-08	5.36E-05
SVOC	2,4-Dimethylphenol	105-67-9	8.20E-05	5.84E-02	8.69E-06	1.03E+03	2.58E+00	4.67E-06	5.11E-03	3.84E-07	3.81E-04
SVOC	Di-n-butylphthalate	84-74-2	3.85E-08	4.38E-02	7.86E-06	1.14E+03	3.44E+00	4.37E-06	4.21E-03	1.62E-10	1.62E-07
SVOC	2,6-Dinitrotoluene	606-20-2	3.06E-05	3.27E-02	7.26E-06	1.23E+03	4.61E+00	4.14E-06	3.46E-03	1.03E-07	1.03E-04
SVOC	Di-n-octylphthalate	117-84-0	2.74E-03	1.51E-02	3.58E-06	2.49E+03	9.99E+00	2.59E-06	2.06E-03	1.77E-06	1.71E-03
SVOC	Fluoranthene	206-44-0	6.60E-04	3.02E-02	6.35E-06	1.41E+03	4.99E+00	3.79E-06	3.28E-03	1.38E-06	1.34E-03
SVOC	Fluorene	86-73-7	2.61E-03	3.63E-02	7.88E-06	1.13E+03	4.16E+00	4.38E-06	3.71E-03	3.02E-06	2.83E-03
SVOC	Hexachlorobenzene	118-74-1	5.41E-02	5.42E-02	5.91E-06	1.51E+03	2.78E+00	3.61E-06	4.86E-03	3.56E-06	3.31E-03
SVOC	Hexachlorobutadiene	87-68-3	3.34E-01	5.61E-02	6.16E-06	1.45E+03	2.69E+00	3.71E-06	4.97E-03	3.71E-06	3.44E-03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	6.56E-05	1.90E-02	5.66E-06	1.58E+03	7.94E+00	3.51E-06	2.41E-03	1.51E-07	1.51E-04
SVOC	2-Methylnaphthalene	91-57-6	2.12E-02	9.86E-02	7.75E-06	1.15E+03	1.53E+00	4.33E-06	7.26E-03	4.21E-06	3.87E-03
SVOC	Methylphenol (total)	1319-77-3	3.54E-05	7.40E-02	1.00E-05	8.93E+02	2.04E+00	5.13E-06	5.99E-03	2.04E-07	2.03E-04
SVOC	Naphthalene	91-20-3	1.98E-02	5.90E-02	7.50E-06	1.19E+03	2.56E+00	4.24E-06	5.14E-03	4.07E-06	3.74E-03
SVOC	Phenanthrene	85-01-8	9.52E-04	3.33E-02	7.47E-06	1.20E+03	4.53E+00	4.22E-06	3.51E-03	1.86E-06	1.79E-03
SVOC	Phenol	108-95-2	1.63E-05	8.20E-02	9.10E-06	9.81E+02	1.84E+00	4.82E-06	6.41E-03	1.02E-07	1.02E-04
SVOC	Pyrene	129-00-0	4.51E-04	2.72E-02	7.24E-06	1.23E+03	5.55E+00	4.14E-06	3.06E-03	1.04E-06	1.01E-03
P/PCB	PCBs (total)	1336-36-3	8.17E-02	8.00E-02	1.00E-05	8.93E+02	1.89E+00	5.13E-06	6.31E-03	5.08E-06	4.59E-03
INORG	Aluminum	7429-90-5									
INORG	Antimony	7440-36-0									
INORG	Arsenic	7440-38-2									
INORG	Barium	7440-39-3									
INORG	Beryllium	7440-41-7									
INORG	Cadmium	7440-43-9									
INORG	Chromium (total)	7440-47-3									
INORG	Cobalt	7440-48-4									

**Attachment B.9: Vapor Flux (mg/m²-s per mg/L) from Spring and Surface Water
Bedford, Indiana**

Analyte Group	Chemical	CASRN	H (unitless)	D_{air} (cm ² /s)	D_{water} (cm ² /s)	Sc_L (unitless)	Sc_G (unitless)	k_L (m/s)	k_G (m/s)	K_L (m/s)	J_L (mg/m ² -s)
INORG	Copper	7440-50-8									
INORG	Cyanide (amenable)	57-12-5A									
INORG	Cyanide (total)	57-12-5									
INORG	Iron	7439-89-6									
INORG	Lead	7439-92-1									
INORG	Manganese	7439-96-5									
INORG	Mercury	7439-97-6	2.90E-01	3.07E-02	6.30E-06	1.42E+03	4.91E+00	3.77E-06	3.32E-03	3.76E-06	3.48E-03
INORG	Nickel	7440-02-0									
INORG	Selenium	7782-49-2									
INORG	Silver	7440-22-4									
INORG	Thallium	7440-28-0									
INORG	Vanadium	7440-62-2									
INORG	Zinc	7440-66-6									
Note:											
	Water density	ρ_w	1.00E+00	g/cm ³							
	Water viscosity	ν_w	8.93E-03	g/cm-s							
	Air density	ρ_a	1.20E-03	g/cm ³							
	Air viscosity	ν_a	1.81E-04	g/cm-s							
	Wind speed	u_{10}	4.2	m/s							
	Friction velocity	u	0.12	m/s							
	Stream Width		6.00	m							
	Stream effective length		300.0	m							
	Stream effective diameter	d_e	47.9	m							
	Stream water surface area	A	1800.0	m ²							
	Stream water depth	d	0.61	m							
	Stream water volume	V	1098.00	m ³							
	Fetch-to-depth ratio	F/D	78.5								

**Attachment B.9: Air Dispersion Factor 'C/Q' for Inhalation of
Stream Vapors and Particulates
Bedford, Indiana**

Exposure Area (m²)	C/Q (kg/m³ per kg/m²-s)
1800	1.50

**Attachment B.9: Risk Based Cancer Criteria for Exposure of Trespassers to Spring and Surface Water
Bedford, Indiana**

				Pathway:	Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/L)	DA (L/cm ² -event)	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	URF (mg/m ³) ⁻¹	RBC (mg/L)	Combined RBC (mg/L)
VOC	Acetone	67-64-1	ID	1.0E+00	9.2E-07			7.5E-07	5.5E-07			5.5E-03			
VOC	Benzene	71-43-2	A	1.0E+00	9.2E-07	5.5E-02	2.0E+02	2.3E-05	1.7E-05	5.5E-02	1.1E+01	6.9E-03	7.8E-03	1.6E+02	9.7E+00
VOC	Bromodichloromethane	75-27-4	B2	1.0E+00	9.2E-07	6.2E-02	1.8E+02	1.2E-05	8.7E-06	6.2E-02	1.8E+01	7.1E-03	1.8E-02	6.8E+01	1.3E+01
VOC	Bromomethane	74-83-9	D	1.0E+00	9.2E-07			4.9E-06	3.5E-06			7.8E-03			
VOC	2-Butanone	78-93-3	ID	1.0E+00	9.2E-07			1.5E-06	1.1E-06			5.4E-03			
VOC	Carbon Disulfide	75-15-0		1.0E+00	9.2E-07			1.9E-05	1.4E-05			7.0E-03			
VOC	Chlorobenzene	108-90-7	D	1.0E+00	9.2E-07			5.3E-05	3.9E-05			6.4E-03			
VOC	Chloroethane	75-00-3		1.0E+00	9.2E-07	2.9E-03	3.7E+03	8.9E-06	6.5E-06	2.9E-03	5.3E+02	8.9E-03			4.6E+02
VOC	Chloroform	67-66-3	B2	1.0E+00	9.2E-07			1.2E-05	8.9E-06			6.9E-03	2.3E-02	5.3E+01	5.3E+01
VOC	Chloromethane	74-87-3	D	1.0E+00	9.2E-07			4.6E-06	3.4E-06			5.3E-03			
VOC	Cumene	98-82-8	D	1.0E+00	9.2E-07			1.7E-04	1.2E-04			6.0E-03			
VOC	Cyclohexane	110-82-7	ID	1.0E+00	9.2E-07			1.6E-04	1.1E-04			6.6E-03			
VOC	Dibromochloromethane	124-48-1	C	1.0E+00	9.2E-07	8.4E-02	1.3E+02	1.0E-05	7.3E-06	8.4E-02	1.6E+01	6.8E-03	2.4E-02	5.2E+01	1.1E+01
VOC	1,2-Dichlorobenzene	95-50-1	D	1.0E+00	9.2E-07			1.0E-04	7.4E-05			6.0E-03			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.0E+00	9.2E-07			9.4E-05	6.8E-05			6.4E-03			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.0E+00	9.2E-07	2.4E-02	4.5E+02	1.0E-04	7.2E-05	2.4E-02	5.8E+00	6.0E-03	6.3E-03	2.3E+02	5.5E+00
VOC	Dichlorodifluoromethane	75-71-8		1.0E+00	9.2E-07			1.7E-05	1.3E-05			6.1E-03			
VOC	1,1-Dichloroethane	75-34-3	C	1.0E+00	9.2E-07			1.2E-05	8.5E-06			7.1E-03			
VOC	1,2-Dichloroethane	107-06-2	B2	1.0E+00	9.2E-07	9.1E-02	1.2E+02	7.2E-06	5.3E-06	9.1E-02	2.1E+01	6.8E-03	2.6E-02	4.8E+01	1.3E+01
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.0E+00	9.2E-07			1.3E-05	9.6E-06			7.5E-03			
VOC	trans-1,2-Dichloroethene	156-60-5		1.0E+00	9.2E-07			1.8E-05	1.3E-05			7.7E-03			
VOC	Ethyl Benzene	100-41-4	D	1.0E+00	9.2E-07			8.7E-05	6.3E-05			6.0E-03			
VOC	2-Hexanone	591-78-6		1.0E+00	9.2E-07			6.3E-06	4.5E-06			7.0E-03			
VOC	Methyl Acetate	79-20-9		1.0E+00	9.2E-07			1.2E-06	9.0E-07			1.2E-03			
VOC	Methyl tert-butyl ether	1634-04-4		1.0E+00	9.2E-07	3.3E-03	3.3E+03	5.5E-06	4.0E-06	3.3E-03	7.5E+02	6.8E-03	1.0E-04	1.3E+04	5.8E+02
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.0E+00	9.2E-07			4.7E-06	3.4E-06			5.4E-03			
VOC	Methylcyclohexane	108-87-2		1.0E+00	9.2E-07			1.9E-04	1.4E-04			6.3E-03			
VOC	Methylene Chloride	75-09-2	B2	1.0E+00	9.2E-07	7.5E-03	1.4E+03	5.8E-06	4.2E-06	7.5E-03	3.2E+02	7.6E-03	4.7E-04	2.4E+03	2.4E+02
VOC	Tetrachloroethene	127-18-4	C-B2	1.0E+00	9.2E-07	5.2E-02	2.1E+02	2.8E-05	2.1E-05	5.2E-02	9.4E+00	6.2E-03	3.1E-03	4.5E+02	8.8E+00
VOC	Toluene	108-88-3	D	1.0E+00	9.2E-07			5.3E-05	3.8E-05			6.3E-03			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.0E+00	9.2E-07			2.0E-04	1.4E-04			6.1E-03			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.0E+00	9.2E-07			2.6E-05	1.9E-05			6.4E-03			
VOC	Trichloroethene	79-01-6	C-B2	1.0E+00	9.2E-07	1.1E-02	9.9E+02	3.7E-05	2.7E-05	1.1E-02	3.3E+01	6.6E-03	1.7E-03	7.6E+02	3.1E+01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.0E+00	9.2E-07			5.1E-05	3.7E-05			6.2E-03			
VOC	Vinyl Chloride	75-01-4	A	1.0E+00	9.2E-07	1.4E+00	7.8E+00	1.0E-05	7.3E-06	1.4E+00	9.7E-01	7.9E-03	8.8E-03	1.2E+02	8.6E-01
VOC	Xylenes (total)	1330-20-7	ID	1.0E+00	9.2E-07			9.0E-05	6.6E-05			6.4E-03			
SVOC	Acenaphthene	83-32-9		1.0E+00	9.2E-07			2.0E-04	1.5E-04			5.2E-03			
SVOC	Acenaphthylene	208-96-8	D	1.0E+00	9.2E-07			2.6E-04	1.9E-04			4.9E-03			
SVOC	Acetophenone	98-86-2	D	1.0E+00	9.2E-07			7.2E-06	5.3E-06			2.5E-03			
SVOC	Anthracene	120-12-7	D	1.0E+00	9.2E-07			4.5E-04	3.3E-04			4.2E-03			
SVOC	Benzaldehyde	100-52-7		1.0E+00	9.2E-07			7.0E-06	5.1E-06			3.7E-03			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.0E+00	9.2E-07	7.3E-01	1.5E+01	1.7E-03	1.2E-03	7.3E-01	1.1E-02	8.4E-04	2.1E-01	4.9E+01	1.1E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	1.0E+00	9.2E-07	7.3E+00	1.5E+00	2.4E-03	1.8E-03	7.3E+00	7.8E-04	2.8E-04	8.9E-01	3.5E+01	7.8E-04
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.0E+00	9.2E-07	7.3E-01	1.5E+01	2.8E-03	2.0E-03	7.3E-01	6.8E-03	3.8E-03	2.1E-01	1.1E+01	6.8E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.0E+00	9.2E-07			3.7E-03	2.7E-03			2.2E-05			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.0E+00	9.2E-07	7.3E-02	1.5E+02	2.8E-03	2.0E-03	7.3E-02	6.8E-02	1.3E-04	2.1E-02	3.0E+03	6.8E-02
SVOC	Biphenyl	92-52-4	D	1.0E+00	9.2E-07			2.6E-04	1.9E-04			5.7E-03			

**Attachment B.9: Risk Based Cancer Criteria for Exposure of Trespassers to Spring and Surface Water
Bedford, Indiana**

				Pathway:	Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	C _{gw} (mg/L)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/L)	DA (L/cm ² -event)	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	URF (mg/m ³) ⁻¹	RBC (mg/L)	Combined RBC (mg/L)
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.0E+00	9.2E-07	1.4E-02	7.8E+02	3.0E-03	2.2E-03	1.4E-02	3.3E-01	2.3E-05	4.0E-03	9.4E+04	3.3E-01
SVOC	Butylbenzylphthalate	85-68-7	C	1.0E+00	9.2E-07			2.7E-04	1.9E-04			1.7E-04			
SVOC	Caprolactam	105-60-2		1.0E+00	9.2E-07			5.1E-07	3.7E-07			8.6E-06			
SVOC	Carbazole	86-74-8	B2	1.0E+00	9.2E-07	2.0E-02	5.4E+02	1.1E-04	8.2E-05	2.0E-02	6.1E+00	3.7E-06	5.7E-03	4.1E+05	6.0E+00
SVOC	4-Chloroaniline	106-47-8		1.0E+00	9.2E-07			1.0E-05	7.6E-06			9.1E-05			
SVOC	Chrysene	218-01-9	B2	1.0E+00	9.2E-07	7.3E-03	1.5E+03	1.7E-03	1.2E-03	7.3E-03	1.1E+00	4.0E-03	2.1E-03	1.0E+03	1.1E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.0E+00	9.2E-07	7.3E+00	1.5E+00	3.8E-03	2.7E-03	7.3E+00	5.0E-04	2.3E-06	2.1E+00	1.8E+03	5.0E-04
SVOC	Dibenzofuran	132-64-9	D	1.0E+00	9.2E-07			2.5E-04	1.8E-04			1.6E-03			
SVOC	Diethylphthalate	84-66-2	D	1.0E+00	9.2E-07			1.5E-05	1.1E-05			8.1E-05			
SVOC	2,4-Dimethylphenol	105-67-9		1.0E+00	9.2E-07			2.3E-05	1.7E-05			5.7E-04			
SVOC	Di-n-butylphthalate	84-74-2	D	1.0E+00	9.2E-07			2.3E-04	1.7E-04			2.4E-07			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.0E+00	9.2E-07	6.8E-01	1.6E+01	7.5E-06	5.5E-06	6.8E-01	2.7E+00	1.6E-04	1.9E-01	2.8E+02	2.3E+00
SVOC	Di-n-octylphthalate	117-84-0		1.0E+00	9.2E-07			3.3E-03	2.4E-03			2.6E-03			
SVOC	Fluoranthene	206-44-0	D	1.0E+00	9.2E-07			9.2E-04	6.7E-04			2.0E-03			
SVOC	Fluorene	86-73-7	D	1.0E+00	9.2E-07			2.9E-04	2.1E-04			4.3E-03			
SVOC	Hexachlorobenzene	118-74-1	B2	1.0E+00	9.2E-07	1.6E+00	6.8E+00	1.4E-03	1.0E-03	1.6E+00	6.1E-03	5.0E-03	4.6E-01	3.7E+00	6.1E-03
SVOC	Hexachlorobutadiene	87-68-3	C	1.0E+00	9.2E-07	7.8E-02	1.4E+02	3.6E-04	2.6E-04	7.8E-02	5.0E-01	5.2E-03	2.2E-02	7.5E+01	4.9E-01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.0E+00	9.2E-07	7.3E-01	1.5E+01	3.7E-03	2.7E-03	7.3E-01	5.1E-03	2.3E-04	2.1E-01	1.8E+02	5.1E-03
SVOC	2-Methylnaphthalene	91-57-6	ID	1.0E+00	9.2E-07			2.0E-04	1.5E-04			5.8E-03			
SVOC	Methylphenol (total)	1319-77-3		1.0E+00	9.2E-07			1.4E-05	1.0E-05			3.0E-04			
SVOC	Naphthalene	91-20-3	C	1.0E+00	9.2E-07			1.0E-04	7.5E-05			5.6E-03			
SVOC	Phenanthrene	85-01-8	D	1.0E+00	9.2E-07			4.0E-04	2.9E-04			2.7E-03			
SVOC	Phenol	108-95-2	ID	1.0E+00	9.2E-07			7.6E-06	5.5E-06			1.5E-04			
SVOC	Pyrene	129-00-0	D	1.0E+00	9.2E-07			9.1E-04	6.6E-04			1.5E-03			
P/PCB	PCBs (total)	1336-36-3	B2	1.0E+00	9.2E-07	2.0E+00	5.4E+00	2.3E-03	1.7E-03	2.0E+00	2.9E-03	6.9E-03	5.7E-01	2.2E+00	2.9E-03
INORG	Aluminum	7429-90-5	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Antimony	7440-36-0		1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Arsenic	7440-38-2	A	1.0E+00	9.2E-07	1.5E+00	7.2E+00	1.0E-06	7.3E-07	1.5E+00	9.2E+00		4.3E+00		4.0E+00
INORG	Barium	7440-39-3	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Beryllium	7440-41-7	B1	1.0E+00	9.2E-07			1.0E-06	7.3E-07				2.4E+00		
INORG	Cadmium	7440-43-9	B1	1.0E+00	9.2E-07			1.0E-06	7.3E-07				1.8E+00		
INORG	Chromium (total)	7440-47-3		1.0E+00	9.2E-07			1.0E-06	7.3E-07				1.2E+01		
INORG	Cobalt	7440-48-4	B1	1.0E+00	9.2E-07			4.0E-07	2.9E-07				2.8E+00		
INORG	Copper	7440-50-8	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Cyanide (amenable)	57-12-5A	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Cyanide (total)	57-12-5	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Iron	7439-89-6	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Lead	7439-92-1	B2	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Manganese	7439-96-5	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Mercury	7439-97-6	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07			5.2E-03			
INORG	Nickel	7440-02-0	A	1.0E+00	9.2E-07			2.0E-07	1.5E-07				2.4E-01		
INORG	Selenium	7782-49-2	D	1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Silver	7440-22-4	D	1.0E+00	9.2E-07			6.0E-07	4.4E-07						
INORG	Thallium	7440-28-0		1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Vanadium	7440-62-2		1.0E+00	9.2E-07			1.0E-06	7.3E-07						
INORG	Zinc	7440-66-6	D	1.0E+00	9.2E-07			6.0E-07	4.4E-07						

**Attachment B.9: Risk Based Noncancer Criteria for Exposure of Trespassers to Spring and Surface Water
Bedford, Indiana**

Chem Group	Chemical	Pathway:		Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			Combined RBC (mg/L)
		CASRN	Carc Class	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/L)	DA (L/cm ² -event)	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/L)	
VOC	Acetone	67-64-1	ID	6.4E-06	9.0E-01	1.4E+05	7.5E-07	3.8E-06	9.0E-01	2.4E+05	5.5E-03	3.2E+00	7.0E+04	3.9E+04
VOC	Benzene	71-43-2	A	6.4E-06	4.0E-03	6.2E+02	2.3E-05	1.2E-04	4.0E-03	3.4E+01	6.9E-03	3.0E-02	5.3E+02	3.1E+01
VOC	Bromodichloromethane	75-27-4	B2	6.4E-06	2.0E-02	3.1E+03	1.2E-05	6.1E-05	2.0E-02	3.3E+02	7.1E-03	7.0E-02	1.2E+03	2.4E+02
VOC	Bromomethane	74-83-9	D	6.4E-06	1.4E-03	2.2E+02	4.9E-06	2.5E-05	1.4E-03	5.6E+01	7.8E-03	5.0E-03	7.8E+01	2.8E+01
VOC	2-Butanone	78-93-3	ID	6.4E-06	6.0E-01	9.3E+04	1.5E-06	7.6E-06	6.0E-01	7.9E+04	5.4E-03	5.0E+00	1.1E+05	3.1E+04
VOC	Carbon Disulfide	75-15-0		6.4E-06	1.0E-01	1.6E+04	1.9E-05	9.8E-05	1.0E-01	1.0E+03	7.0E-03	7.0E-01	1.2E+04	8.9E+02
VOC	Chlorobenzene	108-90-7	D	6.4E-06	2.0E-02	3.1E+03	5.3E-05	2.7E-04	2.0E-02	7.4E+01	6.4E-03	6.0E-02	1.1E+03	6.8E+01
VOC	Chloroethane	75-00-3		6.4E-06	4.0E-01	6.2E+04	8.9E-06	4.5E-05	4.0E-01	8.8E+03	8.9E-03	1.0E+01	1.4E+05	7.3E+03
VOC	Chloroform	67-66-3	B2	6.4E-06	1.0E-02	1.6E+03	1.2E-05	6.2E-05	1.0E-02	1.6E+02	6.9E-03	5.0E-02	8.8E+02	1.3E+02
VOC	Chloromethane	74-87-3	D	6.4E-06			4.6E-06	2.3E-05			5.3E-03	9.0E-02	2.0E+03	2.0E+03
VOC	Cumene	98-82-8	D	6.4E-06	1.0E-01	1.6E+04	1.7E-04	8.7E-04	1.0E-01	1.2E+02	6.0E-03	4.0E-01	8.1E+03	1.1E+02
VOC	Cyclohexane	110-82-7	ID	6.4E-06			1.6E-04	8.0E-04			6.6E-03	6.0E+00	1.1E+05	1.1E+05
VOC	Dibromochloromethane	124-48-1	C	6.4E-06	2.0E-02	3.1E+03	1.0E-05	5.1E-05	2.0E-02	3.9E+02	6.8E-03	7.0E-02	1.3E+03	2.7E+02
VOC	1,2-Dichlorobenzene	95-50-1	D	6.4E-06	9.0E-02	1.4E+04	1.0E-04	5.1E-04	9.0E-02	1.7E+02	6.0E-03	2.0E-01	4.1E+03	1.7E+02
VOC	1,3-Dichlorobenzene	541-73-1	D	6.4E-06	9.0E-04	1.4E+02	9.4E-05	4.8E-04	9.0E-04	1.9E+00	6.4E-03	1.4E-01	2.7E+03	1.9E+00
VOC	1,4-Dichlorobenzene	106-46-7	C	6.4E-06	3.0E-02	4.7E+03	1.0E-04	5.1E-04	3.0E-02	5.9E+01	6.0E-03	8.0E-01	1.6E+04	5.8E+01
VOC	Dichlorodifluoromethane	75-71-8		6.4E-06	2.0E-01	3.1E+04	1.7E-05	8.8E-05	2.0E-01	2.3E+03	6.1E-03	2.0E-01	4.0E+03	1.4E+03
VOC	1,1-Dichloroethane	75-34-3	C	6.4E-06	1.0E-01	1.6E+04	1.2E-05	6.0E-05	1.0E-01	1.7E+03	7.1E-03	5.0E-01	8.5E+03	1.3E+03
VOC	1,2-Dichloroethane	107-06-2	B2	6.4E-06	3.0E-02	4.7E+03	7.2E-06	3.7E-05	3.0E-02	8.2E+02	6.8E-03	5.0E-03	8.9E+01	7.9E+01
VOC	cis-1,2-Dichloroethene	156-59-2	D	6.4E-06	1.0E-02	1.6E+03	1.3E-05	6.7E-05	1.0E-02	1.5E+02	7.5E-03	3.5E-02	5.7E+02	1.1E+02
VOC	trans-1,2-Dichloroethene	156-60-5		6.4E-06	2.0E-02	3.1E+03	1.8E-05	9.3E-05	2.0E-02	2.2E+02	7.7E-03	7.0E-02	1.1E+03	1.7E+02
VOC	Ethyl Benzene	100-41-4	D	6.4E-06	1.0E-01	1.6E+04	8.7E-05	4.4E-04	1.0E-01	2.3E+02	6.0E-03	1.0E+00	2.0E+04	2.2E+02
VOC	2-Hexanone	591-78-6		6.4E-06	4.0E-02	6.2E+03	6.3E-06	3.2E-05	4.0E-02	1.3E+03	7.0E-03	5.0E-03	8.6E+01	8.0E+01
VOC	Methyl Acetate	79-20-9		6.4E-06	1.0E+00	1.6E+05	1.2E-06	6.3E-06	1.0E+00	1.6E+05	1.2E-03	3.5E+00	3.5E+05	6.4E+04
VOC	Methyl tert-butyl ether	1634-04-4		6.4E-06			5.5E-06	2.8E-05			6.8E-03	3.0E+00	5.4E+04	5.4E+04
VOC	4-Methyl-2-pentanone	108-10-1	ID	6.4E-06			4.7E-06	2.4E-05			5.4E-03	3.0E+00	6.8E+04	6.8E+04
VOC	Methylcyclohexane	108-87-2		6.4E-06			1.9E-04	9.5E-04			6.3E-03	3.0E+00	5.8E+04	5.8E+04
VOC	Methylene Chloride	75-09-2	B2	6.4E-06	6.0E-02	9.3E+03	5.8E-06	2.9E-05	6.0E-02	2.0E+03	7.6E-03	3.0E+00	4.8E+04	1.6E+03
VOC	Tetrachloroethene	127-18-4	C-B2	6.4E-06	1.0E-02	1.6E+03	2.8E-05	1.4E-04	1.0E-02	7.0E+01	6.2E-03	4.0E-01	7.9E+03	6.6E+01
VOC	Toluene	108-88-3	D	6.4E-06	2.0E-01	3.1E+04	5.3E-05	2.7E-04	2.0E-01	7.5E+02	6.3E-03	4.0E-01	7.7E+03	6.7E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	D	6.4E-06	1.0E-02	1.6E+03	2.0E-04	1.0E-03	1.0E-02	1.0E+01	6.1E-03	2.0E-01	4.0E+03	1.0E+01
VOC	1,1,1-Trichloroethane	71-55-6	D	6.4E-06	2.8E-01	4.3E+04	2.6E-05	1.3E-04	2.8E-01	2.1E+03	6.4E-03	2.2E+00	4.2E+04	1.9E+03
VOC	Trichloroethene	79-01-6	C-B2	6.4E-06	6.0E-03	9.3E+02	3.7E-05	1.9E-04	6.0E-03	3.1E+01	6.6E-03			3.0E+01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		6.4E-06	3.0E+01	4.7E+06	5.1E-05	2.6E-04	3.0E+01	1.2E+05	6.2E-03	3.0E+01	5.9E+05	9.5E+04
VOC	Vinyl Chloride	75-01-4	A	6.4E-06	3.0E-03	4.7E+02	1.0E-05	5.1E-05	3.0E-03	5.8E+01	7.9E-03	1.0E-01	1.5E+03	5.0E+01
VOC	Xylenes (total)	1330-20-7	ID	6.4E-06	2.0E-01	3.1E+04	9.0E-05	4.6E-04	2.0E-01	4.3E+02	6.4E-03	1.0E-01	1.9E+03	3.5E+02
SVOC	Acenaphthene	83-32-9		6.4E-06	6.0E-02	9.3E+03	2.0E-04	1.0E-03	6.0E-02	5.8E+01	5.2E-03	2.1E-01	5.0E+03	5.7E+01
SVOC	Acenaphthylene	208-96-8	D	6.4E-06	3.0E-02	4.7E+03	2.6E-04	1.3E-03	3.0E-02	2.3E+01	4.9E-03	1.1E-01	2.6E+03	2.2E+01
SVOC	Acetophenone	98-86-2	D	6.4E-06	1.0E-01	1.6E+04	7.2E-06	3.7E-05	1.0E-01	2.7E+03	2.5E-03	3.5E-01	1.7E+04	2.0E+03
SVOC	Anthracene	120-12-7	D	6.4E-06	3.0E-01	4.7E+04	4.5E-04	2.3E-03	3.0E-01	1.3E+02	4.2E-03			1.3E+02
SVOC	Benzaldehyde	100-52-7		6.4E-06	1.0E-01	1.6E+04	7.0E-06	3.6E-05	1.0E-01	2.8E+03	3.7E-03	3.5E-01	1.1E+04	2.0E+03
SVOC	Benzo(a)anthracene	56-55-3	B2	6.4E-06			1.7E-03	8.6E-03			8.4E-04			
SVOC	Benzo(a)pyrene	50-32-8	B2	6.4E-06			2.4E-03	1.2E-02			2.8E-04			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	6.4E-06			2.8E-03	1.4E-02			3.8E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	6.4E-06	3.0E-02	4.7E+03	3.7E-03	1.9E-02	3.0E-02	1.6E+00	2.2E-05	1.1E-01	5.9E+05	1.6E+00
SVOC	Benzo(k)fluoranthene	207-08-9	B2	6.4E-06			2.8E-03	1.4E-02			1.3E-04			
SVOC	Biphenyl	92-52-4	D	6.4E-06	5.0E-02	7.8E+03	2.6E-04	1.3E-03	5.0E-02	3.7E+01	5.7E-03	1.8E-01	3.8E+03	3.7E+01
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	6.4E-06	2.0E-02	3.1E+03	3.0E-03	1.5E-02	2.0E-02	1.3E+00	2.3E-05			1.3E+00
SVOC	Butylbenzylphthalate	85-68-7	C	6.4E-06	2.0E-01	3.1E+04	2.7E-04	1.4E-03	2.0E-01	1.5E+02	1.7E-04	7.0E-01	5.0E+05	1.5E+02

**Attachment B.9: Risk Based Noncancer Criteria for Exposure of Trespassers to Spring and Surface Water
Bedford, Indiana**

		Pathway:		Incidental Ingestion of Water			Dermal Contact with Water				Inhalation of Vapor from Water			
Chem Group	Chemical	CASRN	Carc Class	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/L)	DA (L/cm ² -event)	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d) ⁻¹	RBC (mg/L)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/L)	Combined RBC (mg/L)
SVOC	Caprolactam	105-60-2		6.4E-06	5.0E-01	7.8E+04	5.1E-07	2.6E-06	5.0E-01	1.9E+05	8.6E-06	1.8E+00	2.5E+07	5.5E+04
SVOC	Carbazole	86-74-8	B2	6.4E-06			1.1E-04	5.8E-04			3.7E-06			
SVOC	4-Chloroaniline	106-47-8		6.4E-06	4.0E-03	6.2E+02	1.0E-05	5.3E-05	4.0E-03	7.6E+01	9.1E-05	1.4E-02	1.9E+04	6.7E+01
SVOC	Chrysene	218-01-9	B2	6.4E-06			1.7E-03	8.6E-03			4.0E-03			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	6.4E-06			3.8E-03	1.9E-02			2.3E-06			
SVOC	Dibenzofuran	132-64-9	D	6.4E-06	4.0E-03	6.2E+02	2.5E-04	1.3E-03	4.0E-03	3.1E+00	1.6E-03	1.4E-02	1.1E+03	3.1E+00
SVOC	Diethylphthalate	84-66-2	D	6.4E-06	8.0E-01	1.2E+05	1.5E-05	7.7E-05	8.0E-01	1.0E+04	8.1E-05	2.8E+00	4.2E+06	9.6E+03
SVOC	2,4-Dimethylphenol	105-67-9		6.4E-06	2.0E-02	3.1E+03	2.3E-05	1.2E-04	2.0E-02	1.7E+02	5.7E-04	7.0E-02	1.5E+04	1.6E+02
SVOC	Di-n-butylphthalate	84-74-2	D	6.4E-06	1.0E-01	1.6E+04	2.3E-04	1.2E-03	1.0E-01	8.4E+01	2.4E-07			8.3E+01
SVOC	2,6-Dinitrotoluene	606-20-2	B2	6.4E-06	1.0E-03	1.6E+02	7.5E-06	3.8E-05	1.0E-03	2.6E+01	1.6E-04	3.5E-03	2.7E+03	2.2E+01
SVOC	Di-n-octylphthalate	117-84-0		6.4E-06	4.0E-02	6.2E+03	3.3E-03	1.7E-02	4.0E-02	2.4E+00	2.6E-03			2.4E+00
SVOC	Fluoranthene	206-44-0	D	6.4E-06	4.0E-02	6.2E+03	9.2E-04	4.7E-03	4.0E-02	8.5E+00	2.0E-03	1.4E-01	8.5E+03	8.5E+00
SVOC	Fluorene	86-73-7	D	6.4E-06	4.0E-02	6.2E+03	2.9E-04	1.5E-03	4.0E-02	2.7E+01	4.3E-03	1.4E-01	4.0E+03	2.7E+01
SVOC	Hexachlorobenzene	118-74-1	B2	6.4E-06	8.0E-04	1.2E+02	1.4E-03	7.1E-03	8.0E-04	1.1E-01	5.0E-03			1.1E-01
SVOC	Hexachlorobutadiene	87-68-3	C	6.4E-06	3.0E-04	4.7E+01	3.6E-04	1.8E-03	3.0E-04	1.7E-01	5.2E-03			1.6E-01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6.4E-06			3.7E-03	1.9E-02			2.3E-04			
SVOC	2-Methylnaphthalene	91-57-6	ID	6.4E-06	4.0E-03	6.2E+02	2.0E-04	1.0E-03	4.0E-03	3.9E+00	5.8E-03	3.0E-03	6.3E+01	3.7E+00
SVOC	Methylphenol (total)	1319-77-3		6.4E-06	5.0E-02	7.8E+03	1.4E-05	7.1E-05	5.0E-02	7.0E+02	3.0E-04	1.8E-01	7.0E+04	6.4E+02
SVOC	Naphthalene	91-20-3	C	6.4E-06	2.0E-02	3.1E+03	1.0E-04	5.2E-04	2.0E-02	3.8E+01	5.6E-03	3.0E-03	6.5E+01	2.4E+01
SVOC	Phenanthrene	85-01-8	D	6.4E-06	3.0E-02	4.7E+03	4.0E-04	2.0E-03	3.0E-02	1.5E+01	2.7E-03	1.1E-01	4.7E+03	1.5E+01
SVOC	Phenol	108-95-2	ID	6.4E-06	3.0E-01	4.7E+04	7.6E-06	3.9E-05	3.0E-01	7.7E+03	1.5E-04			6.6E+03
SVOC	Pyrene	129-00-0	D	6.4E-06	3.0E-02	4.7E+03	9.1E-04	4.6E-03	3.0E-02	6.5E+00	1.5E-03	1.1E-01	8.4E+03	6.5E+00
P/PCB	PCBs (total)	1336-36-3	B2	6.4E-06	2.0E-05	3.1E+00	2.3E-03	1.2E-02	2.0E-05	1.7E-03	6.9E-03			1.7E-03
INORG	Aluminum	7429-90-5	D	6.4E-06	1.0E+00	1.6E+05	1.0E-06	5.1E-06	1.0E+00	2.0E+05		5.0E-03		8.7E+04
INORG	Antimony	7440-36-0		6.4E-06	4.0E-04	6.2E+01	1.0E-06	5.1E-06	6.0E-05	1.2E+01		1.4E-03		9.9E+00
INORG	Arsenic	7440-38-2	A	6.4E-06	3.0E-04	4.7E+01	1.0E-06	5.1E-06	3.0E-04	5.9E+01				2.6E+01
INORG	Barium	7440-39-3	D	6.4E-06	7.0E-02	1.1E+04	1.0E-06	5.1E-06	7.0E-02	1.4E+04				6.1E+03
INORG	Beryllium	7440-41-7	B1	6.4E-06	2.0E-03	3.1E+02	1.0E-06	5.1E-06	1.4E-05	2.7E+00		2.0E-05		2.7E+00
INORG	Cadmium	7440-43-9	B1	6.4E-06	5.0E-04	7.8E+01	1.0E-06	5.1E-06	2.5E-05	4.9E+00		2.0E-04		4.6E+00
INORG	Chromium (total)	7440-47-3		6.4E-06	3.0E-03	4.7E+02	1.0E-06	5.1E-06	7.5E-05	1.5E+01				1.4E+01
INORG	Cobalt	7440-48-4	B1	6.4E-06	2.0E-02	3.1E+03	4.0E-07	2.0E-06	2.0E-02	9.8E+03		2.0E-05		2.4E+03
INORG	Copper	7440-50-8	D	6.4E-06	4.0E-02	6.2E+03	1.0E-06	5.1E-06	4.0E-02	7.9E+03		1.4E-01		3.5E+03
INORG	Cyanide (amenable)	57-12-5A	D	6.4E-06	2.0E-02	3.1E+03	1.0E-06	5.1E-06	2.0E-02	3.9E+03		7.0E-02		1.7E+03
INORG	Cyanide (total)	57-12-5	D	6.4E-06	2.0E-02	3.1E+03	1.0E-06	5.1E-06	2.0E-02	3.9E+03		7.0E-02		1.7E+03
INORG	Iron	7439-89-6	D	6.4E-06	3.0E-01	4.7E+04	1.0E-06	5.1E-06	3.0E-01	5.9E+04				2.6E+04
INORG	Lead	7439-92-1	B2	6.4E-06			1.0E-06	5.1E-06						
INORG	Manganese	7439-96-5	D	6.4E-06	1.4E-01	2.2E+04	1.0E-06	5.1E-06	5.6E-03	1.1E+03		5.0E-05		1.0E+03
INORG	Mercury	7439-97-6	D	6.4E-06	3.0E-04	4.7E+01	1.0E-06	5.1E-06	2.1E-05	4.1E+00	5.2E-03	3.0E-04	7.0E+00	2.5E+00
INORG	Nickel	7440-02-0	A	6.4E-06	2.0E-02	3.1E+03	2.0E-07	1.0E-06	8.0E-04	7.9E+02				6.3E+02
INORG	Selenium	7782-49-2	D	6.4E-06	5.0E-03	7.8E+02	1.0E-06	5.1E-06	5.0E-03	9.8E+02		1.8E-02		4.3E+02
INORG	Silver	7440-22-4	D	6.4E-06	5.0E-03	7.8E+02	6.0E-07	3.1E-06	2.0E-04	6.5E+01		1.0E-05		6.0E+01
INORG	Thallium	7440-28-0		6.4E-06	7.0E-05	1.1E+01	1.0E-06	5.1E-06	7.0E-05	1.4E+01		2.5E-04		6.1E+00
INORG	Vanadium	7440-62-2		6.4E-06	7.0E-03	1.1E+03	1.0E-06	5.1E-06	1.8E-04	3.6E+01		2.5E-02		3.5E+01
INORG	Zinc	7440-66-6	D	6.4E-06	3.0E-01	4.7E+04	6.0E-07	3.1E-06	3.0E-01	9.8E+04		1.1E+00		3.2E+04

Attachment B.9: Upper-Bound Estimates of Risk and HQ for Trespasser Exposure to On-Site Soil
GM Powertrain Bedford Facility, Bedford, Indiana

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Surf Soil Conc (mg/kg)	Background Conc (mg/kg)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
Plant_Boundary	VOC	Acetone	67-64-1	ID	7	1	5.56E-02			1.2E+06		4.7E-08
Plant_Boundary	VOC	2-Butanone	78-93-3	ID	7	1	3.85E-03			1.9E+06		2.0E-09
Plant_Boundary	VOC	Methyl Acetate	79-20-9		7	2	8.25E-03			4.3E+06		1.9E-09
Plant_Boundary	VOC	Toluene	108-88-3	D	7	2	6.25E-04			4.9E+04		1.3E-08
Plant_Boundary	SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	1	5.55E-02		2.8E+03		2.0E-10	
Plant_Boundary	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	6.95E-02		1.6E+05	6.5E+05	4.3E-12	1.1E-07
Plant_Boundary	SVOC	Chrysene	218-01-9	B2	7	1	4.73E-02		2.6E+05		1.8E-12	
Plant_Boundary	SVOC	Fluoranthene	206-44-0	D	7	1	8.78E-02			1.1E+06		7.9E-08
Plant_Boundary	SVOC	Phenanthrene	85-01-8	D	7	1	7.15E-02			6.9E+05		1.0E-07
Plant_Boundary	SVOC	Pyrene	129-00-0	D	7	1	6.63E-02			8.5E+05		7.8E-08
Plant_Boundary	P/PCB	PCBs (total)	1336-36-3	B2	8	5	3.13E+01		7.8E+02	6.0E+02	4.0E-07	5.3E-02
Plant_Boundary	INORG	Aluminum	7429-90-5	D	7	7	1.97E+04	1.48E+04		4.0E+07		1.2E-04
Plant_Boundary	INORG	Antimony	7440-36-0		6	3	1.01E+00	4.40E-01		1.7E+04		3.4E-05
Plant_Boundary	INORG	Arsenic	7440-38-2	A	7	7	1.05E+01	1.13E+01	1.8E+03	1.1E+04		
Plant_Boundary	INORG	Barium	7440-39-3	D	7	7	9.14E+01	8.38E+01		2.9E+06		2.6E-06
Plant_Boundary	INORG	Beryllium	7440-41-7	B1	7	5	6.40E-01	5.70E-01	3.7E+06	8.2E+04	1.9E-13	8.6E-07
Plant_Boundary	INORG	Cadmium	7440-43-9	B1	7	6	2.35E-01	5.52E-01	5.0E+06	3.7E+04		
Plant_Boundary	INORG	Chromium (total)	7440-47-3		7	7	3.07E+01	2.82E+01	7.4E+05	1.2E+05	3.4E-11	2.0E-05
Plant_Boundary	INORG	Cobalt	7440-48-4	B1	7	7	1.44E+01	1.00E+01	3.2E+06	7.5E+05	1.4E-11	5.8E-06
Plant_Boundary	INORG	Copper	7440-50-8	D	7	7	4.27E+02	1.89E+01		1.7E+06		2.5E-04
Plant_Boundary	INORG	Iron	7439-89-6	D	7	7	2.39E+04	2.44E+04		1.2E+07		
Plant_Boundary	INORG	Manganese	7439-96-5	D	7	7	6.81E+02	6.76E+02		4.4E+06		1.0E-06
Plant_Boundary	INORG	Mercury	7439-97-6	D	7	7	2.45E-01	7.05E-02		1.5E+03		1.2E-04
Plant_Boundary	INORG	Nickel	7440-02-0	A	7	7	3.89E+01	1.83E+01	3.7E+07	8.3E+05	5.5E-12	2.5E-05
Plant_Boundary	INORG	Selenium	7782-49-2	D	7	3	9.80E-01	3.96E-01		2.1E+05		2.8E-06
Plant_Boundary	INORG	Thallium	7440-28-0		7	1	5.45E-01	8.40E-01		2.9E+03		
Plant_Boundary	INORG	Vanadium	7440-62-2		7	7	3.41E+01	4.18E+01		2.9E+05		
Plant_Boundary	INORG	Zinc	7440-66-6	D	7	7	1.05E+02	5.48E+01		1.2E+07		4.1E-06
Notes:												
1. Only constituents detected at Plant_Boundary are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc Class - EPA Weight-of-Evidence Cancer Classification												

**Attachment B.9: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
VOC	Acetone	67-64-1	5.75E-01	3.45E-03	7.95E-04	1.24E-01	1.01E-02	1.14E-05	1.11E-07	5.24E-05	6.94E-06	5.81E+01	2.30E+02	7.38E+02	1.00E+06	1.03E+05
VOC	Benzene	71-43-2	5.89E+01	3.53E-01	1.14E-01	8.80E-02	7.17E-03	9.80E-06	9.50E-08	1.14E-03	3.24E-05	7.81E+01	9.50E+01	4.10E+02	1.75E+03	8.30E+02
VOC	Bromodichloromethane	75-27-4	5.50E+01	3.30E-01	3.28E-02	2.98E-02	2.43E-03	1.06E-05	1.03E-07	1.21E-04	1.06E-05	1.64E+02	5.00E+01	4.53E+02	6.74E+03	2.94E+03
VOC	Bromomethane	74-83-9	1.05E+01	6.30E-02	1.28E-01	7.28E-02	5.93E-03	1.21E-05	1.17E-07	2.70E-03	4.98E-05	9.49E+01	1.62E+03	8.48E+03	1.52E+04	2.83E+03
VOC	2-Butanone	78-93-3	5.20E+00	3.12E-02	1.14E-03	9.49E-02	7.72E-03	9.80E-06	9.50E-08	4.52E-05	6.45E-06	7.21E+01	9.53E+01	3.80E+02	2.40E+05	3.14E+04
VOC	Carbon Disulfide	75-15-0	4.57E+01	2.74E-01	6.20E-01	1.04E-01	8.47E-03	1.00E-05	9.70E-08	7.09E-03	8.08E-05	7.61E+01	3.59E+02	1.51E+03	1.19E+03	5.83E+02
VOC	Chlorobenzene	108-90-7	2.19E+02	1.31E+00	7.60E-02	7.30E-02	5.94E-03	8.70E-06	8.44E-08	2.10E-04	1.39E-05	1.13E+02	1.20E+01	7.44E+01	4.72E+02	6.74E+02
VOC	Chloroethane	75-00-3	1.49E+01	8.94E-02	1.80E-01	1.10E-01	8.96E-03	1.53E-05	1.48E-07	4.80E-03	6.65E-05	6.45E+01	1.01E+03	3.59E+03	5.68E+03	1.26E+03
VOC	Chloroform	67-66-3	3.98E+01	2.39E-01	7.50E-02	1.04E-01	8.47E-03	1.00E-05	9.70E-08	1.19E-03	3.32E-05	1.19E+02	1.97E+02	1.30E+03	7.92E+03	2.79E+03
VOC	Chloromethane	74-87-3	7.80E+00	4.68E-02	1.80E-01	1.26E-01	1.03E-02	6.50E-06	6.30E-08	6.80E-03	7.92E-05	5.05E+01	4.30E+03	1.20E+04	5.33E+03	9.58E+02
VOC	Cumene	98-82-8	3.30E+03	1.98E+01	2.37E+01	6.50E-02	5.29E-03	7.83E-06	7.59E-08	3.41E-03	5.60E-05	1.20E+02	4.50E+00	2.99E+01	6.13E+01	1.23E+03
VOC	Cyclohexane	110-82-7	6.35E+02	3.81E+00	3.98E+00	1.10E-01	8.96E-03	9.14E-06	8.86E-08	5.07E-03	6.84E-05	8.42E+01	9.69E+01	4.50E+02	5.50E+01	2.56E+02
VOC	Dibromochloromethane	124-48-1	6.31E+01	3.79E-01	1.61E-02	1.96E-02	1.60E-03	1.05E-05	1.02E-07	3.54E-05	5.71E-06	2.08E+02	4.90E+00	5.64E+01	2.60E+03	1.25E+03
VOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	3.70E+00	3.90E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	3.81E-05	5.92E-06	1.47E+02	1.36E+00	1.10E+01	1.56E+02	5.94E+02
VOC	1,3-Dichlorobenzene	541-73-1	1.70E+03	1.02E+01	6.33E-02	4.14E-02	3.37E-03	8.85E-06	8.58E-08	1.37E-05	3.55E-06	1.47E+02	2.15E+06	1.75E+01	1.33E+02	1.37E+03
VOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	3.70E+00	4.98E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	4.86E-05	6.69E-06	1.47E+02	1.00E+00	8.12E+00	7.38E+01	2.81E+02
VOC	Dichlorodifluoromethane	75-71-8	1.30E+02	7.80E-01	7.01E+00	8.00E-02	6.51E-03	8.00E-06	7.76E-08	1.38E-02	1.13E-04	1.21E+02	4.85E+03	3.24E+04	2.80E+02	6.15E+02
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	1.90E-01	1.15E-01	7.42E-02	6.04E-03	1.05E-05	1.02E-07	1.48E-03	3.69E-05	9.90E+01	2.27E+02	1.24E+03	5.06E+03	1.57E+03
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.04E-01	2.01E-02	1.04E-01	8.47E-03	9.90E-06	9.60E-08	5.42E-04	2.23E-05	9.90E+01	7.89E+01	4.31E+02	8.52E+03	1.77E+03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.13E-01	8.35E-02	7.36E-02	5.99E-03	1.13E-05	1.10E-07	1.01E-03	3.05E-05	9.69E+01	2.03E+02	1.09E+03	3.50E+03	1.15E+03
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	3.15E-01	1.93E-01	7.07E-02	5.76E-03	1.19E-05	1.15E-07	1.63E-03	3.87E-05	9.69E+01	3.33E+02	1.78E+03	6.30E+03	2.84E+03
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.18E+00	1.62E-01	7.50E-02	6.11E-03	7.80E-06	7.56E-08	2.83E-04	1.61E-05	1.06E+02	9.60E+00	5.63E+01	1.69E+02	3.90E+02
VOC	2-Hexanone	591-78-6	1.48E+01	8.90E-02	3.58E-02	1.35E-01	1.10E-02	1.03E-05	9.99E-08	1.33E-03	3.50E-05	1.00E+02	1.16E+01	6.43E+01	1.75E+04	3.31E+03
VOC	Methyl Acetate	79-20-9	1.66E+00	9.98E-03	5.75E-05	1.23E-01	9.99E-03	1.10E-05	1.07E-07	4.13E-06	1.95E-06	7.41E+01	2.16E+02	8.85E+02	2.44E+05	2.66E+04
VOC	Methyl tert-butyl ether	1634-04-4	1.15E+01	6.89E-02	1.20E-02	8.59E-02	7.00E-03	1.01E-05	9.80E-08	3.26E-04	1.73E-05	8.82E+01	2.50E+02	1.22E+03	5.10E+04	8.70E+03
VOC	4-Methyl-2-pentanone	108-10-1	1.90E+01	1.14E-01	2.82E-03	7.50E-02	6.11E-03	7.80E-06	7.56E-08	5.36E-05	7.02E-06	1.00E+02	1.99E+01	1.10E+02	1.90E+04	4.06E+03
VOC	Methylcyclohexane	108-87-2	8.65E+02	5.19E+00	7.99E+00	8.86E-02	8.03E-03	8.52E-06	8.26E-08	6.73E-03	7.87E-05	9.82E+01	4.60E+01	2.50E+02	1.40E+01	9.72E+01
VOC	Methylene Chloride	75-09-2	1.17E+01	7.02E-02	4.49E-02	1.01E-01	8.22E-03	1.17E-05	1.13E-07	1.37E-03	3.56E-05	8.49E+01	4.33E+02	2.03E+03	1.30E+04	2.31E+03
VOC	Tetrachloroethene	127-18-4	1.55E+02	9.30E-01	3.77E-01	7.20E-02	5.86E-03	8.20E-06	7.95E-08	1.33E-03	3.50E-05	1.66E+02	1.86E+01	1.70E+02	2.00E+02	2.20E+02
VOC	Toluene	108-88-3	1.82E+02	1.09E+00	1.38E-01	8.70E-02	7.08E-03	8.60E-06	8.34E-08	5.24E-04	2.20E-05	9.21E+01	2.84E+01	1.45E+02	5.26E+02	6.40E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.07E+01	2.91E-02	3.00E-02	2.44E-03	8.23E-06	7.98E-08	4.37E-06	2.01E-06	1.81E+02	4.31E-01	4.32E+00	3.00E+02	3.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	6.60E-01	3.53E-01	7.80E-02	6.35E-03	8.80E-06	8.53E-08	1.80E-03	4.07E-05	1.33E+02	1.24E+02	9.12E+02	1.33E+03	1.10E+03
VOC	Trichloroethene	79-01-6	1.66E+02	9.96E-01	2.11E-01	7.90E-02	6.43E-03	9.10E-06	8.83E-08	7.92E-04	2.70E-05	1.31E+02	7.35E+01	5.33E+02	1.10E+03	1.25E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.30E+03	7.80E+00	9.83E+00	7.80E-02	6.35E-03	8.20E-06	7.95E-08	4.24E-03	6.25E-05	1.87E+02	3.32E+02	3.43E+03	1.70E+02	1.66E+03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.12E-01	5.55E-01	1.06E-01	8.63E-03	1.23E-05	1.19E-07	1.01E-02	9.63E-05	6.25E+01	2.98E+03	1.03E+04	2.76E+03	8.70E+02
VOC	Xylenes (total)	1330-20-7	3.86E+02	2.32E+00	1.38E-01	7.80E-02	6.35E-03	8.75E-06	8.48E-08	2.37E-04	1.48E-05	1.06E+02	7.99E+00	4.69E+01	1.75E+02	4.27E+02
SVOC	Acenaphthene	83-32-9	7.08E+03	4.25E+01	3.18E-03	4.21E-02	3.43E-03	7.69E-06	7.46E-08	1.71E-07	3.96E-07	1.54E+02	2.50E-03	2.13E-02	4.24E+00	1.81E+02
SVOC	Acenaphthylene	208-96-8	4.90E+03	2.94E+01	2.31E-03	4.42E-02	3.60E-03	7.44E-06	7.22E-08	1.88E-07	4.16E-07	1.52E+02	9.12E-04	7.67E-03	1.61E+01	4.75E+02
SVOC	Acetophenone	98-86-2	4.10E+01	2.46E-01	2.19E-04	8.00E-02	6.51E-03	8.00E-06	7.76E-08	2.88E-06	1.63E-06	1.20E+02	3.97E-01	2.64E+00	6.13E+03	2.12E+03
SVOC	Anthracene	120-12-7	2.95E+04	1.77E+02	1.34E-03	3.24E-02	2.64E-03	7.74E-06	7.51E-08	1.34E-08	1.11E-07	1.78E+02	2.67E-06	2.63E-05	4.34E-02	7.69E+00
SVOC	Benzaldehyde	100-52-7	2.85E+01	1.71E-01	4.86E-04	7.21E-02	5.87E-03	9.07E-06	8.80E-08	7.20E-06	2.58E-06	1.06E+02	9.00E-01	5.28E+00	3.00E+03	8.12E+02
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	2.39E+03	6.85E-05	5.10E-02	4.15E-03	9.00E-06	8.73E-08	1.03E-10	9.74E-09	2.28E+02	1.05E-07	1.32E-02	6.40E-03	2.24E+01
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	6.12E+03	2.32E-05	4.30E-02	3.50E-03	9.00E-06	8.73E-08	1.82E-11	4.10E-09	2.52E+02	5.49E-09	7.65E-08	1.62E-03	9.91E+00
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	7.38E+03	2.28E-03	2.26E-02	1.84E-03	5.56E-06	5.39E-08	3.80E-10	1.87E-08	2.52E+02	5.00E-07	6.97E-06	1.50E-03	1.11E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	1.60E+06	9.60E+03	2.88E-06	2.03E-02	1.65E-03	5.20E-06	5.04E-08	3.81E-12	1.87E-09	2.76E+02	1.01E-10	1.54E-09	2.60E-04	2.50E+00
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	7.38E+03	1.70E-05	2.26E-02	1.84E-03	5.56E-06	5.39E-08	7.64E-12	2.65E-09	2.52E+02	2.00E-09	2.79E-08	8.00E-04	5.90E+00
SVOC	Biphenyl	92-52-4	1.05E+04	6.29E+01	6.13E-03	4.04E-02	3.29E-03	8.15E-06	7.90E-08	2.13E-07	4.43E-07	1.54E+02	9.64E-03	8.21E-02	6.03E+00	3.80E+02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	9.06E+04	2.09E-06	3.51E-02	2.86E-03	3.66E-06	3.55E-08	3.03E-13	5.28E-10	3.91E+02	6.45E-06	1.39E+02	6.40E-01	3.08E+04
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	3.45E+02	2.59E-05	1.74E-02	1.42E-03	4.83E-06	4.68E-08	1.60E-10	1.21E-08	3.12E+02	8.25E-06	1.42E-04	2.69E+00	9.28E+02
SVOC	Caprolactam	105-60-2	6.51E-01	3.91E-03	5.17E-07	6.54E-02	5.33E-03	8.99E-06	8.72E-08	5.77E-07	7.29E-07	1.13E+02	1.60E-03	1.00E-02	7.72E+05	7.97E+04
SVOC	Carbazole	86-74-8	3.39E+03	2.03E+01	3.13E-07	3.90E-02	3.18E-03	7.03E-06	6.82E-08	2.24E-09	4.54E-08	1.67E+02	5.19E-07	4.79E-06	7.48E+00	1.53E+02
SVOC	4-Chloroaniline	106-47-8	6.61E+01	3.97E-01	6.80E-06	4.83E-02	3.93E-03	1.01E-05	9.80E-08	1.66E-07	3.92E-07	1.28E+02	1.23E-02	8.67E-02	5.30E+03	2.63E+03
SVOC	Chrysene	218-01-9	3.98E+05	2.39E+03	1.94E-03	2.48E-02	2.02E-03	6.21E-06	6.02E-08	1.10E-09	3.19E-08	2.28E+02	6.23E-09	7.86E-08	1.60E-03	3.82E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	3.80E+06	2.28E+04	3.02E-07	2.02E-02	1.64E-03	5.18E-06	5.02E-08	1.47E-12	1.16E-09	2.78E+02	1.00E-10	1.54E-09	2.49E-03	5.68E+01

**Attachment B.9: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
SVOC	Dibenzofuran	132-64-9	1.12E+04	6.74E+01	2.57E-04	2.70E-02	2.20E-03	5.93E-06	5.75E-08	6.12E-09	7.51E-08	1.68E+02	1.80E-04	1.67E-03	1.00E+01	6.75E+02
SVOC	Diethylphthalate	84-66-2	2.88E+02	1.73E+00	9.25E-06	2.56E-02	2.08E-03	6.35E-06	6.16E-08	2.93E-08	1.64E-07	2.22E+02	1.65E-03	2.03E-02	1.08E+03	1.97E+03
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.25E+00	4.10E-05	5.84E-02	4.76E-03	8.69E-06	8.43E-08	1.37E-07	3.55E-07	1.22E+02	9.80E-02	6.62E-01	7.87E+03	1.07E+04
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.03E+02	1.93E-08	4.38E-02	3.57E-03	7.86E-06	7.62E-08	2.48E-10	1.51E-08	2.78E+02	7.30E-05	1.12E-03	1.12E+01	2.28E+03
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	4.15E-01	1.53E-05	3.27E-02	2.66E-03	7.26E-06	7.04E-08	1.43E-07	3.63E-07	1.82E+02	5.67E-04	5.71E-03	1.82E+02	9.36E+01
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	4.99E+05	1.37E-03	1.51E-02	1.23E-03	3.58E-06	3.47E-08	2.28E-12	1.45E-09	3.91E+02	2.60E-06	5.61E-05	2.00E-02	9.98E+03
SVOC	Fluoranthene	206-44-0	1.07E+05	6.42E+02	3.30E-04	3.02E-02	2.46E-03	6.35E-06	6.16E-08	9.00E-10	2.88E-08	2.02E+02	7.80E-06	8.72E-05	2.06E-01	1.32E+02
SVOC	Fluorene	86-73-7	1.38E+04	8.28E+01	1.31E-03	3.63E-02	2.96E-03	7.88E-06	7.64E-08	3.14E-08	1.70E-07	1.66E+02	6.33E-04	5.81E-03	1.98E+00	1.64E+02
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	3.30E+02	2.71E-02	5.42E-02	4.41E-03	5.91E-06	5.73E-08	2.40E-07	4.70E-07	2.85E+02	1.80E-05	2.83E-04	6.20E+00	2.05E+03
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	3.22E+02	1.67E-01	5.61E-02	4.57E-03	6.16E-06	5.97E-08	1.57E-06	1.20E-06	2.61E+02	2.21E-01	3.19E+00	3.23E+00	1.04E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.08E+04	3.28E-05	1.90E-02	1.55E-03	5.66E-06	5.49E-08	3.36E-12	1.76E-09	2.76E+02	1.00E-10	1.53E-09	2.20E-05	4.58E-01
SVOC	2-Methylnaphthalene	91-57-6	6.23E+03	3.74E+01	1.06E-02	9.86E-02	8.03E-03	7.75E-06	7.52E-08	1.50E-06	1.18E-06	1.42E+02	5.50E-02	4.32E-01	2.46E+01	9.22E+02
SVOC	Methylphenol (total)	1319-77-3	8.60E+01	5.16E-01	1.77E-05	7.40E-02	6.03E-03	1.00E-05	9.70E-08	2.19E-07	4.49E-07	1.08E+02			2.30E+04	1.42E+04
SVOC	Naphthalene	91-20-3	2.00E+03	1.20E+01	9.90E-03	5.90E-02	4.80E-03	7.50E-06	7.27E-08	2.61E-06	1.55E-06	1.28E+02	8.50E-02	6.02E-01	3.10E+01	3.75E+02
SVOC	Phenanthrene	85-01-8	1.40E+04	8.40E+01	4.76E-04	3.33E-02	2.71E-03	7.47E-06	7.24E-08	1.07E-08	9.94E-08	1.78E+02	1.12E-04	1.10E-03	1.15E+00	9.67E+01
SVOC	Phenol	108-95-2	2.88E+01	1.73E-01	8.15E-06	8.20E-02	6.68E-03	9.10E-06	8.83E-08	3.47E-07	5.65E-07	9.41E+01	2.76E-01	1.44E+00	8.28E+04	2.25E+04
SVOC	Pyrene	129-00-0	1.05E+05	6.30E+02	2.26E-04	2.72E-02	2.21E-03	7.24E-06	7.02E-08	5.99E-10	2.35E-08	2.02E+02	4.59E-06	5.13E-05	1.35E-01	8.51E+01
P/PCB	PCBs (total)	1336-36-3	2.45E+06	1.47E+04	4.09E-02	8.00E-02	6.51E-03	1.00E-05	9.70E-08	1.20E-08	1.05E-07	3.28E+02	7.71E-05	1.40E-03	1.20E-02	1.76E+02
INORG	Aluminum	7429-90-5		1.50E+03								2.70E+01				
INORG	Antimony	7440-36-0		4.50E+01								1.22E+02				
INORG	Arsenic	7440-38-2		2.90E+01								7.49E+01				
INORG	Barium	7440-39-3		4.10E+01								1.37E+02				
INORG	Beryllium	7440-41-7		7.90E+02								9.01E+00				
INORG	Cadmium	7440-43-9		7.50E+01								1.12E+02				
INORG	Chromium (total)	7440-47-3		1.90E+01								5.20E+01				
INORG	Cobalt	7440-48-4		4.50E+01								5.89E+01				
INORG	Copper	7440-50-8		3.50E+01								6.35E+01				
INORG	Cyanide (amenable)	57-12-5A		9.90E+00								2.60E+01				
INORG	Cyanide (total)	57-12-5		9.90E+00								2.60E+01				
INORG	Iron	7439-89-6		2.50E+01								5.58E+01				
INORG	Lead	7439-92-1		9.00E+02								2.07E+02				
INORG	Manganese	7439-96-5		6.50E+01								5.49E+01				
INORG	Mercury	7439-97-6		1.00E+03	1.45E-01	3.07E-02	2.50E-03	6.30E-06	6.11E-08	2.40E-07	4.70E-07	2.01E+02	1.96E-03	2.17E-02	5.60E-02	5.60E+01
INORG	Nickel	7440-02-0		6.50E+01								5.87E+01				
INORG	Selenium	7782-49-2		5.00E+00								7.90E+01				
INORG	Silver	7440-22-4		8.30E+00								1.08E+02				
INORG	Thallium	7440-28-0		7.10E+01								2.04E+02				
INORG	Vanadium	7440-62-2		1.00E+03								5.09E+01				
INORG	Zinc	7440-66-6		6.20E+01								6.54E+01				
Notes:	Soil bulk density	kg/L	ρ _b	1.5E+00												
	Soil particle density	kg/L	ρ _s	2.65E+00												
	Soil porosity	L/L-soil	n	4.30E-01												
	Soil water content	L/L-soil	θ _w	0.15												
	Soil air-filled porosity	L/L-soil	θ _a	0.28												
	Soil organic carbon fraction	unitless	f _{oc}	0.006												
	Averaging period	year	ED	10												
		s	ED	3.15E+08												
	Molar Gas Constant	L-mmHg/mole-°K	R	62.411												
	Temperature	°C	T	10												
		°K	T	290												

**Attachment B.9: Air Dispersion Factor 'C/Q' for Inhalation of
Soil Vapors and Particulates
Bedford, Indiana**

Exposure Area (m²)	C/Q (kg/m³ per kg/m²-s)
12,140	15.00

**Attachment B.9: Estimated Concentrations in Ambient Air from
Exposed Soil for Trespassers
Bedford, Indiana**

			Vapor			PM ₁₀	
	C/Q (kg/m ³ per kg/m ² -s):		15.00			15.00	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
VOC	Acetone	67-64-1	1.00E+00	1.00E+00	1.04E-04	1.00E+00	3.18E-10
VOC	Benzene	71-43-2	1.00E+00	1.00E+00	4.86E-04	1.00E+00	3.18E-10
VOC	Bromodichloromethane	75-27-4	1.00E+00	1.00E+00	1.58E-04	1.00E+00	3.18E-10
VOC	Bromomethane	74-83-9	1.00E+00	1.00E+00	7.48E-04	1.00E+00	3.18E-10
VOC	2-Butanone	78-93-3	1.00E+00	1.00E+00	9.68E-05	1.00E+00	3.18E-10
VOC	Carbon Disulfide	75-15-0	1.00E+00	1.00E+00	1.21E-03	1.00E+00	3.18E-10
VOC	Chlorobenzene	108-90-7	1.00E+00	1.00E+00	2.08E-04	1.00E+00	3.18E-10
VOC	Chloroethane	75-00-3	1.00E+00	1.00E+00	9.98E-04	1.00E+00	3.18E-10
VOC	Chloroform	67-66-3	1.00E+00	1.00E+00	4.97E-04	1.00E+00	3.18E-10
VOC	Chloromethane	74-87-3	1.00E+00	1.00E+00	1.19E-03	1.00E+00	3.18E-10
VOC	Cumene	98-82-8	1.00E+00	1.00E+00	8.41E-04	1.00E+00	3.18E-10
VOC	Cyclohexane	110-82-7	1.00E+00	1.00E+00	1.03E-03	1.00E+00	3.18E-10
VOC	Dibromochloromethane	124-48-1	1.00E+00	1.00E+00	8.57E-05	1.00E+00	3.18E-10
VOC	1,2-Dichlorobenzene	95-50-1	1.00E+00	1.00E+00	8.88E-05	1.00E+00	3.18E-10
VOC	1,3-Dichlorobenzene	541-73-1	1.00E+00	1.00E+00	5.33E-05	1.00E+00	3.18E-10
VOC	1,4-Dichlorobenzene	106-46-7	1.00E+00	1.00E+00	1.00E-04	1.00E+00	3.18E-10
VOC	Dichlorodifluoromethane	75-71-8	1.00E+00	1.00E+00	1.69E-03	1.00E+00	3.18E-10
VOC	1,1-Dichloroethane	75-34-3	1.00E+00	1.00E+00	5.54E-04	1.00E+00	3.18E-10
VOC	1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	3.35E-04	1.00E+00	3.18E-10
VOC	cis-1,2-Dichloroethene	156-59-2	1.00E+00	1.00E+00	4.58E-04	1.00E+00	3.18E-10
VOC	trans-1,2-Dichloroethene	156-60-5	1.00E+00	1.00E+00	5.81E-04	1.00E+00	3.18E-10
VOC	Ethyl Benzene	100-41-4	1.00E+00	1.00E+00	2.42E-04	1.00E+00	3.18E-10
VOC	2-Hexanone	591-78-6	1.00E+00	1.00E+00	5.25E-04	1.00E+00	3.18E-10
VOC	Methyl Acetate	79-20-9	1.00E+00	1.00E+00	2.92E-05	1.00E+00	3.18E-10
VOC	Methyl tert-butyl ether	1634-04-4	1.00E+00	1.00E+00	2.60E-04	1.00E+00	3.18E-10
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+00	1.00E+00	1.05E-04	1.00E+00	3.18E-10
VOC	Methylcyclohexane	108-87-2	1.00E+00	1.00E+00	1.18E-03	1.00E+00	3.18E-10
VOC	Methylene Chloride	75-09-2	1.00E+00	1.00E+00	5.34E-04	1.00E+00	3.18E-10
VOC	Tetrachloroethene	127-18-4	1.00E+00	1.00E+00	5.25E-04	1.00E+00	3.18E-10
VOC	Toluene	108-88-3	1.00E+00	1.00E+00	3.30E-04	1.00E+00	3.18E-10
VOC	1,2,4-Trichlorobenzene	120-82-1	1.00E+00	1.00E+00	3.01E-05	1.00E+00	3.18E-10
VOC	1,1,1-Trichloroethane	71-55-6	1.00E+00	1.00E+00	6.10E-04	1.00E+00	3.18E-10
VOC	Trichloroethene	79-01-6	1.00E+00	1.00E+00	4.05E-04	1.00E+00	3.18E-10
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.00E+00	1.00E+00	9.37E-04	1.00E+00	3.18E-10
VOC	Vinyl Chloride	75-01-4	1.00E+00	1.00E+00	1.44E-03	1.00E+00	3.18E-10
VOC	Xylenes (total)	1330-20-7	1.00E+00	1.00E+00	2.22E-04	1.00E+00	3.18E-10
SVOC	Acenaphthene	83-32-9	1.00E+00	1.00E+00	5.95E-06	1.00E+00	3.18E-10
SVOC	Acenaphthylene	208-96-8	1.00E+00	1.00E+00	6.24E-06	1.00E+00	3.18E-10
SVOC	Acetophenone	98-86-2	1.00E+00	1.00E+00	2.44E-05	1.00E+00	3.18E-10
SVOC	Anthracene	120-12-7	1.00E+00	1.00E+00	1.67E-06	1.00E+00	3.18E-10
SVOC	Benzaldehyde	100-52-7	1.00E+00	1.00E+00	3.86E-05	1.00E+00	3.18E-10
SVOC	Benzo(a)anthracene	56-55-3	1.00E+00	1.00E+00	1.46E-07	1.00E+00	3.18E-10
SVOC	Benzo(a)pyrene	50-32-8	1.00E+00	1.00E+00	6.14E-08	1.00E+00	3.18E-10
SVOC	Benzo(b)fluoranthene	205-99-2	1.00E+00	1.00E+00	2.81E-07	1.00E+00	3.18E-10
SVOC	Benzo(g,h,i)perylene	191-24-2	1.00E+00	1.00E+00	2.81E-08	1.00E+00	3.18E-10
SVOC	Benzo(k)fluoranthene	207-08-9	1.00E+00	1.00E+00	3.98E-08	1.00E+00	3.18E-10
SVOC	Biphenyl	92-52-4	1.00E+00	1.00E+00	6.64E-06	1.00E+00	3.18E-10
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.00E+00	1.00E+00	7.93E-09	1.00E+00	3.18E-10
SVOC	Butylbenzylphthalate	85-68-7	1.00E+00	1.00E+00	1.82E-07	1.00E+00	3.18E-10

**Attachment B.9: Estimated Concentrations in Ambient Air from
Exposed Soil for Trespassers
Bedford, Indiana**

			Vapor			PM ₁₀	
	C/IQ (kg/m ³ per kg/m ² -s):		15.00			15.00	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
SVOC	Caprolactam	105-60-2	1.00E+00	1.00E+00	1.09E-05	1.00E+00	3.18E-10
SVOC	Carbazole	86-74-8	1.00E+00	1.00E+00	6.81E-07	1.00E+00	3.18E-10
SVOC	4-Chloroaniline	106-47-8	1.00E+00	1.00E+00	5.87E-06	1.00E+00	3.18E-10
SVOC	Chrysene	218-01-9	1.00E+00	1.00E+00	4.78E-07	1.00E+00	3.18E-10
SVOC	Dibenz(a,h)anthracene	53-70-3	1.00E+00	1.00E+00	1.75E-08	1.00E+00	3.18E-10
SVOC	Dibenzofuran	132-64-9	1.00E+00	1.00E+00	1.13E-06	1.00E+00	3.18E-10
SVOC	Diethylphthalate	84-66-2	1.00E+00	1.00E+00	2.46E-06	1.00E+00	3.18E-10
SVOC	2,4-Dimethylphenol	105-67-9	1.00E+00	1.00E+00	5.32E-06	1.00E+00	3.18E-10
SVOC	Di-n-butylphthalate	84-74-2	1.00E+00	1.00E+00	2.27E-07	1.00E+00	3.18E-10
SVOC	2,6-Dinitrotoluene	606-20-2	1.00E+00	1.00E+00	5.44E-06	1.00E+00	3.18E-10
SVOC	Di-n-octylphthalate	117-84-0	1.00E+00	1.00E+00	2.17E-08	1.00E+00	3.18E-10
SVOC	Fluoranthene	206-44-0	1.00E+00	1.00E+00	4.32E-07	1.00E+00	3.18E-10
SVOC	Fluorene	86-73-7	1.00E+00	1.00E+00	2.55E-06	1.00E+00	3.18E-10
SVOC	Hexachlorobenzene	118-74-1	1.00E+00	1.00E+00	7.05E-06	1.00E+00	3.18E-10
SVOC	Hexachlorobutadiene	87-68-3	1.00E+00	1.00E+00	1.80E-05	1.00E+00	3.18E-10
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.00E+00	4.58E-01	1.21E-08	1.00E+00	3.18E-10
SVOC	2-Methylnaphthalene	91-57-6	1.00E+00	1.00E+00	1.76E-05	1.00E+00	3.18E-10
SVOC	Methylphenol (total)	1319-77-3	1.00E+00	1.00E+00	6.74E-06	1.00E+00	3.18E-10
SVOC	Naphthalene	91-20-3	1.00E+00	1.00E+00	2.32E-05	1.00E+00	3.18E-10
SVOC	Phenanthrene	85-01-8	1.00E+00	1.00E+00	1.49E-06	1.00E+00	3.18E-10
SVOC	Phenol	108-95-2	1.00E+00	1.00E+00	8.48E-06	1.00E+00	3.18E-10
SVOC	Pyrene	129-00-0	1.00E+00	1.00E+00	3.52E-07	1.00E+00	3.18E-10
P/PCB	PCBs (total)	1336-36-3	1.00E+00	1.00E+00	1.58E-06	1.00E+00	3.18E-10
INORG	Aluminum	7429-90-5	1.00E+00			1.00E+00	3.18E-10
INORG	Antimony	7440-36-0	1.00E+00			1.00E+00	3.18E-10
INORG	Arsenic	7440-38-2	1.00E+00			1.00E+00	3.18E-10
INORG	Barium	7440-39-3	1.00E+00			1.00E+00	3.18E-10
INORG	Beryllium	7440-41-7	1.00E+00			1.00E+00	3.18E-10
INORG	Cadmium	7440-43-9	1.00E+00			1.00E+00	3.18E-10
INORG	Chromium (total)	7440-47-3	1.00E+00			1.00E+00	3.18E-10
INORG	Cobalt	7440-48-4	1.00E+00			1.00E+00	3.18E-10
INORG	Copper	7440-50-8	1.00E+00			1.00E+00	3.18E-10
INORG	Cyanide (amenable)	57-12-5A	1.00E+00			1.00E+00	3.18E-10
INORG	Cyanide (total)	57-12-5	1.00E+00			1.00E+00	3.18E-10
INORG	Iron	7439-89-6	1.00E+00			1.00E+00	3.18E-10
INORG	Lead	7439-92-1	1.00E+00			1.00E+00	3.18E-10
INORG	Manganese	7439-96-5	1.00E+00			1.00E+00	3.18E-10
INORG	Mercury	7439-97-6	1.00E+00	1.00E+00	7.05E-06	1.00E+00	3.18E-10
INORG	Nickel	7440-02-0	1.00E+00			1.00E+00	3.18E-10
INORG	Selenium	7782-49-2	1.00E+00			1.00E+00	3.18E-10
INORG	Silver	7440-22-4	1.00E+00			1.00E+00	3.18E-10
INORG	Thallium	7440-28-0	1.00E+00			1.00E+00	3.18E-10
INORG	Vanadium	7440-62-2	1.00E+00			1.00E+00	3.18E-10
INORG	Zinc	7440-66-6	1.00E+00			1.00E+00	3.18E-10
Notes:							
C _{source} = Minimum of Soil Concentration and C _{sat}							

**Attachment B.9: Risk Based Cancer Criteria for Exposure of Trespassers to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	3.45E-09							1.04E-04			3.18E-10			
VOC	Benzene	71-43-2	A	1.00E+00	3.45E-09	5.5E-02	5.3E+04			5.5E-02		4.86E-04	7.8E-03	7.5E+02	3.18E-10	7.8E-03	1.1E+09	7.4E+02
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	3.45E-09	6.2E-02	4.7E+04			6.2E-02		1.58E-04	1.8E-02	1.0E+03	3.18E-10	1.8E-02	5.0E+08	9.9E+02
VOC	Bromomethane	74-83-9	D	1.00E+00	3.45E-09							7.48E-04			3.18E-10			
VOC	2-Butanone	78-93-3	ID	1.00E+00	3.45E-09							9.68E-05			3.18E-10			
VOC	Carbon Disulfide	75-15-0		1.00E+00	3.45E-09							1.21E-03			3.18E-10			
VOC	Chlorobenzene	108-90-7	D	1.00E+00	3.45E-09							2.08E-04			3.18E-10			
VOC	Chloroethane	75-00-3		1.00E+00	3.45E-09	2.9E-03	1.0E+06			2.9E-03		9.98E-04			3.18E-10			1.0E+06
VOC	Chloroform	67-66-3	B2	1.00E+00	3.45E-09							4.97E-04	2.3E-02	2.5E+02	3.18E-10	2.3E-02	3.9E+08	2.5E+02
VOC	Chloromethane	74-87-3	D	1.00E+00	3.45E-09							1.19E-03			3.18E-10			
VOC	Cumene	98-82-8	D	1.00E+00	3.45E-09							8.41E-04			3.18E-10			
VOC	Cyclohexane	110-82-7	ID	1.00E+00	3.45E-09							1.03E-03			3.18E-10			
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	3.45E-09	8.4E-02	3.4E+04			8.4E-02		8.57E-05	2.4E-02	1.4E+03	3.18E-10	2.4E-02	3.7E+08	1.3E+03
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	3.45E-09							8.88E-05			3.18E-10			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	3.45E-09							5.33E-05			3.18E-10			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	3.45E-09	2.4E-02	1.2E+05			2.4E-02		1.00E-04	6.3E-03	4.5E+03	3.18E-10	6.3E-03	1.4E+09	4.3E+03
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	3.45E-09							1.69E-03			3.18E-10			
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	3.45E-09							5.54E-04			3.18E-10			
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	3.45E-09	9.1E-02	3.2E+04			9.1E-02		3.35E-04	2.6E-02	3.3E+02	3.18E-10	2.6E-02	3.4E+08	3.2E+02
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	3.45E-09							4.58E-04			3.18E-10			
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	3.45E-09							5.81E-04			3.18E-10			
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	3.45E-09							2.42E-04			3.18E-10			
VOC	2-Hexanone	591-78-6		1.00E+00	3.45E-09							5.25E-04			3.18E-10			
VOC	Methyl Acetate	79-20-9		1.00E+00	3.45E-09							2.92E-05			3.18E-10			
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	3.45E-09	3.3E-03	8.8E+05			3.3E-03		2.60E-04	1.0E-04	1.1E+05	3.18E-10	1.0E-04	8.9E+10	9.7E+04
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	3.45E-09							1.05E-04			3.18E-10			
VOC	Methylcyclohexane	108-87-2		1.00E+00	3.45E-09							1.18E-03			3.18E-10			
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	3.45E-09	7.5E-03	3.9E+05			7.5E-03		5.34E-04	4.7E-04	1.1E+04	3.18E-10	4.7E-04	1.9E+10	1.1E+04
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	3.45E-09	5.2E-02	5.6E+04			5.2E-02		5.25E-04	3.1E-03	1.8E+03	3.18E-10	3.1E-03	2.9E+09	1.7E+03
VOC	Toluene	108-88-3	D	1.00E+00	3.45E-09							3.30E-04			3.18E-10			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	3.45E-09							3.01E-05			3.18E-10			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	3.45E-09							6.10E-04			3.18E-10			
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	3.45E-09	1.1E-02	2.6E+05			1.1E-02		4.05E-04	1.7E-03	4.1E+03	3.18E-10	1.7E-03	5.2E+09	4.1E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	3.45E-09							9.37E-04			3.18E-10			
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	3.45E-09	1.4E+00	2.1E+03			1.4E+00		1.44E-03	8.8E-03	2.2E+02	3.18E-10	8.8E-03	1.0E+09	2.0E+02
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	3.45E-09							2.22E-04			3.18E-10			
SVOC	Acenaphthene	83-32-9		1.00E+00	3.45E-09			1.30E-01	1.24E-09			5.95E-06			3.18E-10			
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			6.24E-06			3.18E-10			
SVOC	Acetophenone	98-86-2	D	1.00E+00	3.45E-09			1.00E-01	9.55E-10			2.44E-05			3.18E-10			
SVOC	Anthracene	120-12-7	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			1.67E-06			3.18E-10			
SVOC	Benzaldehyde	100-52-7		1.00E+00	3.45E-09			1.00E-01	9.55E-10			3.86E-05			3.18E-10			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	3.45E-09	7.3E-01	4.0E+03	1.30E-01	1.24E-09	7.3E-01	1.1E+04	1.46E-07	2.1E-01	9.3E+04	3.18E-10	2.1E-01	4.3E+07	2.8E+03
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	3.45E-09	7.3E+00	4.0E+02	1.30E-01	1.24E-09	7.3E+00	1.1E+03	6.14E-08	8.9E-01	5.2E+04	3.18E-10	8.9E-01	1.0E+07	2.9E+02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	3.45E-09	7.3E-01	4.0E+03	1.30E-01	1.24E-09	7.3E-01	1.1E+04	2.81E-07	2.1E-01	4.8E+04	3.18E-10	2.1E-01	4.3E+07	2.8E+03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			3.81E-08			3.18E-10			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	3.45E-09	7.3E-02	4.0E+04	1.30E-01	1.24E-09	7.3E-02	1.1E+05	3.98E-08	2.1E-02	3.4E+06	3.18E-10	2.1E-02	4.3E+08	2.9E+04
SVOC	Biphenyl	92-52-4	D	1.00E+00	3.45E-09			1.00E-01	9.55E-10			6.64E-06			3.18E-10			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	3.45E-09	1.4E-02	2.1E+05	1.00E-01	9.55E-10	1.4E-02	7.5E+05	7.93E-09	4.0E-03	9.0E+07	3.18E-10	4.0E-03	2.2E+09	1.6E+05
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	3.45E-09			1.00E-01	9.55E-10			1.82E-07			3.18E-10			
SVOC	Caprolactam	105-60-2		1.00E+00	3.45E-09			1.00E-01	9.55E-10			1.09E-05			3.18E-10			
SVOC	Carbazole	86-74-8	B2	1.00E+00	3.45E-09	2.0E-02	1.4E+05	1.00E-01	9.55E-10	2.0E-02	5.2E+05	6.81E-07	5.7E-03	7.3E+05	3.18E-10	5.7E-03	1.6E+09	9.8E+04

**Attachment B.9: Risk Based Cancer Criteria for Exposure of Trespassers to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	3.45E-09			1.00E-01	9.55E-10			5.87E-06			3.18E-10			
SVOC	Chrysene	218-01-9	B2	1.00E+00	3.45E-09	7.3E-03	4.0E+05	1.30E-01	1.24E-09	7.3E-03	1.1E+06	4.78E-07	2.1E-03	2.8E+06	3.18E-10	2.1E-03	4.3E+09	2.6E+05
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	3.45E-09	7.3E+00	4.0E+02	1.30E-01	1.24E-09	7.3E+00	1.1E+03	1.75E-08	2.1E+00	7.8E+04	3.18E-10	2.1E+00	4.3E+06	2.9E+02
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	3.45E-09			1.00E-01	9.55E-10			1.13E-06			3.18E-10			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	3.45E-09			1.00E-01	9.55E-10			2.46E-06			3.18E-10			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	3.45E-09			1.00E-01	9.55E-10			5.32E-06			3.18E-10			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	3.45E-09			1.00E-01	9.55E-10			2.27E-07			3.18E-10			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	3.45E-09	6.8E-01	4.3E+03	1.00E-01	9.55E-10	6.8E-01	1.5E+04	5.44E-06	1.9E-01	2.7E+03	3.18E-10	1.9E-01	4.6E+07	1.5E+03
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	3.45E-09			1.00E-01	9.55E-10			2.17E-08			3.18E-10			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			4.32E-07			3.18E-10			
SVOC	Fluorene	86-73-7	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			2.55E-06			3.18E-10			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	3.45E-09	1.6E+00	1.8E+03	1.00E-01	9.55E-10	1.6E+00	6.5E+03	7.05E-06	4.6E-01	8.8E+02	3.18E-10	4.6E-01	1.9E+07	5.4E+02
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	3.45E-09	7.8E-02	3.7E+04	1.00E-01	9.55E-10	7.8E-02	1.3E+05	1.80E-05	2.2E-02	7.2E+03	3.18E-10	2.2E-02	4.1E+08	5.7E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	3.45E-09	7.3E-01	4.0E+03	1.30E-01	1.24E-09	7.3E-01	1.1E+04	1.21E-08	2.1E-01	1.1E+06	3.18E-10	2.1E-01	4.3E+07	2.9E+03
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	3.45E-09			1.00E-01	9.55E-10			1.76E-05			3.18E-10			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	3.45E-09			1.00E-01	9.55E-10			6.74E-06			3.18E-10			
SVOC	Naphthalene	91-20-3	C	1.00E+00	3.45E-09			1.30E-01	1.24E-09			2.32E-05			3.18E-10			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			1.49E-06			3.18E-10			
SVOC	Phenol	108-95-2	ID	1.00E+00	3.45E-09			1.00E-01	9.55E-10			8.48E-06			3.18E-10			
SVOC	Pyrene	129-00-0	D	1.00E+00	3.45E-09			1.30E-01	1.24E-09			3.52E-07			3.18E-10			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	3.45E-09	2.0E+00	1.4E+03	1.40E-01	1.34E-09	2.0E+00	3.7E+03	1.58E-06	5.7E-01	3.2E+03	3.18E-10	5.7E-01	1.6E+07	7.8E+02
INORG	Aluminum	7429-90-5	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Antimony	7440-36-0		1.00E+00	3.45E-09										3.18E-10			
INORG	Arsenic	7440-38-2	A	1.00E+00	3.45E-09	1.5E+00	1.9E+03	3.00E-02	2.86E-10	1.5E+00	2.3E+04		4.3E+00		3.18E-10	4.3E+00	2.1E+06	1.8E+03
INORG	Barium	7440-39-3	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Beryllium	7440-41-7	B1	1.00E+00	3.45E-09								2.4E+00		3.18E-10	2.4E+00	3.7E+06	3.7E+06
INORG	Cadmium	7440-43-9	B1	1.00E+00	3.45E-09			1.00E-03	9.55E-12				1.8E+00		3.18E-10	1.8E+00	5.0E+06	5.0E+06
INORG	Chromium (total)	7440-47-3		1.00E+00	3.45E-09								1.2E+01		3.18E-10	1.2E+01	7.4E+05	7.4E+05
INORG	Cobalt	7440-48-4	B1	1.00E+00	3.45E-09								2.8E+00		3.18E-10	2.8E+00	3.2E+06	3.2E+06
INORG	Copper	7440-50-8	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Cyanide (total)	57-12-5	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Iron	7439-89-6	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Lead	7439-92-1	B2	1.00E+00	3.45E-09										3.18E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Mercury	7439-97-6	D	1.00E+00	3.45E-09							7.05E-06			3.18E-10			
INORG	Nickel	7440-02-0	A	1.00E+00	3.45E-09								2.4E-01		3.18E-10	2.4E-01	3.7E+07	3.7E+07
INORG	Selenium	7782-49-2	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Silver	7440-22-4	D	1.00E+00	3.45E-09										3.18E-10			
INORG	Thallium	7440-28-0		1.00E+00	3.45E-09										3.18E-10			
INORG	Vanadium	7440-62-2		1.00E+00	3.45E-09										3.18E-10			
INORG	Zinc	7440-66-6	D	1.00E+00	3.45E-09										3.18E-10			

Attachment B.9: Risk Based Noncancer Criteria for Exposure of Trespassers to Soil
Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	2.42E-08	9.0E-01	3.72E+07			9.0E-01		1.04E-04	3.2E+00	1.23E+06	3.18E-10	3.15E+00	1.20E+12	1.19E+06
VOC	Benzene	71-43-2	A	1.00E+00	2.42E-08	4.0E-03	1.65E+05			4.0E-03		4.86E-04	3.0E-02	2.50E+03	3.18E-10	3.00E-02	1.15E+10	2.46E+03
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02		1.58E-04	7.0E-02	1.79E+04	3.18E-10	7.00E-02	2.67E+10	1.75E+04
VOC	Bromomethane	74-83-9	D	1.00E+00	2.42E-08	1.4E-03	5.79E+04			1.4E-03		7.48E-04	5.0E-03	2.71E+02	3.18E-10	5.00E-03	1.91E+09	2.70E+02
VOC	2-Butanone	78-93-3	ID	1.00E+00	2.42E-08	6.0E-01	2.48E+07			6.0E-01		9.68E-05	5.0E+00	2.10E+06	3.18E-10	5.00E+00	1.91E+12	1.93E+06
VOC	Carbon Disulfide	75-15-0		1.00E+00	2.42E-08	1.0E-01	4.14E+06			1.0E-01		1.21E-03	7.0E-01	2.34E+04	3.18E-10	7.00E-01	2.67E+11	2.33E+04
VOC	Chlorobenzene	108-90-7	D	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02		2.08E-04	6.0E-02	1.17E+04	3.18E-10	6.00E-02	2.29E+10	1.15E+04
VOC	Chloroethane	75-00-3		1.00E+00	2.42E-08	4.0E-01	1.65E+07			4.0E-01		9.98E-04	1.0E+01	4.07E+05	3.18E-10	1.00E+01	3.82E+12	3.97E+05
VOC	Chloroform	67-66-3	B2	1.00E+00	2.42E-08	1.0E-02	4.14E+05			1.0E-02		4.97E-04	5.0E-02	4.08E+03	3.18E-10	5.00E-02	1.91E+10	4.04E+03
VOC	Chloromethane	74-87-3	D	1.00E+00	2.42E-08							1.19E-03	9.0E-02	3.07E+03	3.18E-10	9.00E-02	3.44E+10	3.07E+03
VOC	Cumene	98-82-8	D	1.00E+00	2.42E-08	1.0E-01	4.14E+06			1.0E-01		8.41E-04	4.0E-01	1.93E+04	3.18E-10	4.00E-01	1.53E+11	1.92E+04
VOC	Cyclohexane	110-82-7	ID	1.00E+00	2.42E-08							1.03E-03	6.0E+00	2.37E+05	3.18E-10	6.00E+00	2.29E+12	2.37E+05
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02		8.57E-05	7.0E-02	3.31E+04	3.18E-10	7.00E-02	2.67E+10	3.19E+04
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	2.42E-08	9.0E-02	3.72E+06			9.0E-02		8.88E-05	2.0E-01	9.13E+04	3.18E-10	2.00E-01	7.64E+10	8.91E+04
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	2.42E-08	9.0E-04	3.72E+04			9.0E-04		5.33E-05	1.4E-01	1.06E+05	3.18E-10	1.40E-01	5.35E+10	2.76E+04
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	2.42E-08	3.0E-02	1.24E+06			3.0E-02		1.00E-04	8.0E-01	3.23E+05	3.18E-10	8.00E-01	3.06E+11	2.56E+05
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	2.42E-08	2.0E-01	8.27E+06			2.0E-01		1.69E-03	2.0E-01	4.80E+03	3.18E-10	2.00E-01	7.64E+10	4.80E+03
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	2.42E-08	1.0E-01	4.14E+06			1.0E-01		5.54E-04	5.0E-01	3.66E+04	3.18E-10	5.00E-01	1.91E+11	3.63E+04
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	2.42E-08	3.0E-02	1.24E+06			3.0E-02		3.35E-04	5.0E-03	6.05E+02	3.18E-10	5.00E-03	1.91E+09	6.05E+02
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	2.42E-08	1.0E-02	4.14E+05			1.0E-02		4.58E-04	3.5E-02	3.10E+03	3.18E-10	3.50E-02	1.34E+10	3.08E+03
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02		5.81E-04	7.0E-02	4.89E+03	3.18E-10	7.00E-02	2.67E+10	4.86E+03
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	2.42E-08	1.0E-01	4.14E+06			1.0E-01		2.42E-04	1.0E+00	1.67E+05	3.18E-10	1.00E+00	3.82E+11	1.61E+05
VOC	2-Hexanone	591-78-6		1.00E+00	2.42E-08	4.0E-02	1.65E+06			4.0E-02		5.25E-04	5.0E-03	3.86E+02	3.18E-10	5.00E-03	1.91E+09	3.86E+02
VOC	Methyl Acetate	79-20-9		1.00E+00	2.42E-08	1.0E+00	4.14E+07			1.0E+00		2.92E-05	3.5E+00	4.85E+06	3.18E-10	3.50E+00	1.34E+12	4.34E+06
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	2.42E-08							2.60E-04	3.0E+00	4.68E+05	3.18E-10	3.00E+00	1.15E+12	4.68E+05
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	2.42E-08							1.05E-04	3.0E+00	1.15E+06	3.18E-10	3.00E+00	1.15E+12	1.15E+06
VOC	Methylcyclohexane	108-87-2		1.00E+00	2.42E-08							1.18E-03	3.0E+00	1.03E+05	3.18E-10	3.00E+00	1.15E+12	1.03E+05
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	2.42E-08	6.0E-02	2.48E+06			6.0E-02		5.34E-04	3.0E+00	2.28E+05	3.18E-10	3.00E+00	1.15E+12	2.09E+05
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	2.42E-08	1.0E-02	4.14E+05			1.0E-02		5.25E-04	4.0E-01	3.09E+04	3.18E-10	4.00E-01	1.53E+11	2.87E+04
VOC	Toluene	108-88-3	D	1.00E+00	2.42E-08	2.0E-01	8.27E+06			2.0E-01		3.30E-04	4.0E-01	4.92E+04	3.18E-10	4.00E-01	1.53E+11	4.89E+04
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	2.42E-08	1.0E-02	4.14E+05			1.0E-02		3.01E-05	2.0E-01	2.70E+05	3.18E-10	2.00E-01	7.64E+10	1.63E+05
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	2.42E-08	2.8E-01	1.16E+07			2.8E-01		6.10E-04	2.2E+00	1.46E+05	3.18E-10	2.20E+00	8.41E+11	1.44E+05
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	2.42E-08	6.0E-03	2.48E+05			6.0E-03		4.05E-04			3.18E-10			2.48E+05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	2.42E-08	3.0E+01	1.24E+09			3.0E+01		9.37E-04	3.0E+01	1.30E+06	3.18E-10	3.00E+01	1.15E+13	1.30E+06
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	2.42E-08	3.0E-03	1.24E+05			3.0E-03		1.44E-03	1.0E-01	2.81E+03	3.18E-10	1.00E-01	3.82E+10	2.75E+03
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	2.42E-08	2.0E-01	8.27E+06			2.0E-01		2.22E-04	1.0E-01	1.83E+04	3.18E-10	1.00E-01	3.82E+10	1.82E+04
SVOC	Acenaphthene	83-32-9		1.00E+00	2.42E-08	6.0E-02	2.48E+06	1.30E-01	8.69E-09	6.0E-02	6.90E+06	5.95E-06	2.1E-01	1.43E+06	3.18E-10	2.10E-01	8.02E+10	8.03E+05
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	2.42E-08	3.0E-02	1.24E+06	1.30E-01	8.69E-09	3.0E-02	3.45E+06	6.24E-06	1.1E-01	6.82E+05	3.18E-10	1.05E-01	4.01E+10	3.90E+05
SVOC	Acetophenone	98-86-2	D	1.00E+00	2.42E-08	1.0E-01	4.14E+06	1.00E-01	6.68E-09	1.0E-01	1.50E+07	2.44E-05	3.5E-01	5.81E+05	3.18E-10	3.50E-01	1.34E+11	4.93E+05
SVOC	Anthracene	120-12-7	D	1.00E+00	2.42E-08	3.0E-01	1.24E+07	1.30E-01	8.69E-09	3.0E-01	3.45E+07	1.67E-06			3.18E-10			9.13E+06
SVOC	Benzaldehyde	100-52-7		1.00E+00	2.42E-08	1.0E-01	4.14E+06	1.00E-01	6.68E-09	1.0E-01	1.50E+07	3.86E-05	3.5E-01	3.67E+05	3.18E-10	3.50E-01	1.34E+11	3.30E+05
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			1.46E-07			3.18E-10			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			6.14E-08			3.18E-10			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			2.81E-07			3.18E-10			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	2.42E-08	3.0E-02	1.24E+06	1.30E-01	8.69E-09	3.0E-02	3.45E+06	2.81E-08	1.1E-01	1.52E+08	3.18E-10	1.05E-01	4.01E+10	9.07E+05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			3.98E-08			3.18E-10			
SVOC	Biphenyl	92-52-4	D	1.00E+00	2.42E-08	5.0E-02	2.07E+06	1.00E-01	6.68E-09	5.0E-02	7.48E+06	6.64E-06	1.8E-01	1.07E+06	3.18E-10	1.75E-01	6.69E+10	6.44E+05
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	2.42E-08	2.0E-02	8.27E+05	1.00E-01	6.68E-09	2.0E-02	2.99E+06	7.93E-09			3.18E-10			6.48E+05
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	2.42E-08	2.0E-01	8.27E+06	1.00E-01	6.68E-09	2.0E-01	2.99E+07	1.82E-07	7.0E-01	1.56E+08	3.18E-10	7.00E-01	2.67E+11	6.22E+06
SVOC	Caprolactam	105-60-2		1.00E+00	2.42E-08	5.0E-01	2.07E+07	1.00E-01	6.68E-09	5.0E-01	7.48E+07	1.09E-05	1.8E+00	6.49E+06	3.18E-10	1.75E+00	6.69E+11	4.63E+06
SVOC	Carbazole	86-74-8	B2	1.00E+00	2.42E-08			1.00E-01	6.68E-09			6.81E-07			3.18E-10			

Attachment B.9: Risk Based Noncancer Criteria for Exposure of Trespassers to Soil
Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	2.42E-08	4.0E-03	1.65E+05	1.00E-01	6.68E-09	4.0E-03	5.98E+05	5.87E-06	1.4E-02	9.67E+04	3.18E-10	1.40E-02	5.35E+09	5.54E+04
SVOC	Chrysene	218-01-9	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			4.78E-07			3.18E-10			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			1.75E-08			3.18E-10			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	2.42E-08	4.0E-03	1.65E+05	1.00E-01	6.68E-09	4.0E-03	5.98E+05	1.13E-06	1.4E-02	5.04E+05	3.18E-10	1.40E-02	5.35E+09	1.03E+05
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	2.42E-08	8.0E-01	3.31E+07	1.00E-01	6.68E-09	8.0E-01	1.20E+08	2.46E-06	2.8E+00	4.61E+07	3.18E-10	2.80E+00	1.07E+12	1.66E+07
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	2.42E-08	2.0E-02	8.27E+05	1.00E-01	6.68E-09	2.0E-02	2.99E+06	5.32E-06	7.0E-02	5.34E+05	3.18E-10	7.00E-02	2.67E+10	2.93E+05
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	2.42E-08	1.0E-01	4.14E+06	1.00E-01	6.68E-09	1.0E-01	1.50E+07	2.27E-07			3.18E-10			3.24E+06
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	2.42E-08	1.0E-03	4.14E+04	1.00E-01	6.68E-09	1.0E-03	1.50E+05	5.44E-06	3.5E-03	2.61E+04	3.18E-10	3.50E-03	1.34E+09	1.44E+04
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	2.42E-08	4.0E-02	1.65E+06	1.00E-01	6.68E-09	4.0E-02	5.98E+06	2.17E-08			3.18E-10			1.30E+06
SVOC	Fluoranthene	206-44-0	D	1.00E+00	2.42E-08	4.0E-02	1.65E+06	1.30E-01	8.69E-09	4.0E-02	4.60E+06	4.32E-07	1.4E-01	1.31E+07	3.18E-10	1.40E-01	5.35E+10	1.11E+06
SVOC	Fluorene	86-73-7	D	1.00E+00	2.42E-08	4.0E-02	1.65E+06	1.30E-01	8.69E-09	4.0E-02	4.60E+06	2.55E-06	1.4E-01	2.23E+06	3.18E-10	1.40E-01	5.35E+10	7.87E+05
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	2.42E-08	8.0E-04	3.31E+04	1.00E-01	6.68E-09	8.0E-04	1.20E+05	7.05E-06			3.18E-10			2.59E+04
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	2.42E-08	3.0E-04	1.24E+04	1.00E-01	6.68E-09	3.0E-04	4.49E+04	1.80E-05			3.18E-10			9.72E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	2.42E-08			1.30E-01	8.69E-09			1.21E-08			3.18E-10			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	2.42E-08	4.0E-03	1.65E+05	1.00E-01	6.68E-09	4.0E-03	5.98E+05	1.76E-05	3.0E-03	6.90E+03	3.18E-10	3.00E-03	1.15E+09	6.55E+03
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	2.42E-08	5.0E-02	2.07E+06	1.00E-01	6.68E-09	5.0E-02	7.48E+06	6.74E-06	1.8E-01	1.05E+06	3.18E-10	1.75E-01	6.69E+10	6.38E+05
SVOC	Naphthalene	91-20-3	C	1.00E+00	2.42E-08	2.0E-02	8.27E+05	1.30E-01	8.69E-09	2.0E-02	2.30E+06	2.32E-05	3.0E-03	5.23E+03	3.18E-10	3.00E-03	1.15E+09	5.19E+03
SVOC	Phenanthrene	85-01-8	D	1.00E+00	2.42E-08	3.0E-02	1.24E+06	1.30E-01	8.69E-09	3.0E-02	3.45E+06	1.49E-06	1.1E-01	2.85E+06	3.18E-10	1.05E-01	4.01E+10	6.92E+05
SVOC	Phenol	108-95-2	ID	1.00E+00	2.42E-08	3.0E-01	1.24E+07	1.00E-01	6.68E-09	3.0E-01	4.49E+07	8.48E-06			3.18E-10			9.72E+06
SVOC	Pyrene	129-00-0	D	1.00E+00	2.42E-08	3.0E-02	1.24E+06	1.30E-01	8.69E-09	3.0E-02	3.45E+06	3.52E-07	1.1E-01	1.21E+07	3.18E-10	1.05E-01	4.01E+10	8.49E+05
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	2.42E-08	2.0E-05	8.27E+02	1.40E-01	9.36E-09	2.0E-05	2.14E+03	1.58E-06			3.18E-10			5.96E+02
INORG	Aluminum	7429-90-5	D	1.00E+00	2.42E-08	1.0E+00	4.14E+07			1.0E+00			5.0E-03		3.18E-10	5.00E-03	1.91E+09	4.05E+07
INORG	Antimony	7440-36-0		1.00E+00	2.42E-08	4.0E-04	1.65E+04			6.0E-05			1.4E-03		3.18E-10	1.40E-03	5.35E+08	1.65E+04
INORG	Arsenic	7440-38-2	A	1.00E+00	2.42E-08	3.0E-04	1.24E+04	3.00E-02	2.01E-09	3.0E-04	1.50E+05				3.18E-10			1.15E+04
INORG	Barium	7440-39-3	D	1.00E+00	2.42E-08	7.0E-02	2.90E+06			7.0E-02					3.18E-10			2.90E+06
INORG	Beryllium	7440-41-7	B1	1.00E+00	2.42E-08	2.0E-03	8.27E+04			1.4E-05			2.0E-05		3.18E-10	2.00E-05	7.64E+06	8.18E+04
INORG	Cadmium	7440-43-9	B1	1.00E+00	2.42E-08	1.0E-03	4.14E+04	1.00E-03	6.68E-11	2.5E-05	3.74E+05		2.0E-04		3.18E-10	2.00E-04	7.62E+07	3.72E+04
INORG	Chromium (total)	7440-47-3		1.00E+00	2.42E-08	3.0E-03	1.24E+05			7.5E-05					3.18E-10			1.24E+05
INORG	Cobalt	7440-48-4	B1	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02			2.0E-05		3.18E-10	2.00E-05	7.64E+06	7.47E+05
INORG	Copper	7440-50-8	D	1.00E+00	2.42E-08	4.0E-02	1.65E+06			4.0E-02			1.4E-01		3.18E-10	1.40E-01	5.35E+10	1.65E+06
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02			7.0E-02		3.18E-10	7.00E-02	2.67E+10	8.27E+05
INORG	Cyanide (total)	57-12-5	D	1.00E+00	2.42E-08	2.0E-02	8.27E+05			2.0E-02			7.0E-02		3.18E-10	7.00E-02	2.67E+10	8.27E+05
INORG	Iron	7439-89-6	D	1.00E+00	2.42E-08	3.0E-01	1.24E+07			3.0E-01					3.18E-10			1.24E+07
INORG	Lead	7439-92-1	B2	1.00E+00	2.42E-08										3.18E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	2.42E-08	1.4E-01	5.79E+06			5.6E-03			5.0E-05		3.18E-10	5.00E-05	1.91E+07	4.44E+06
INORG	Mercury	7439-97-6	D	1.00E+00	2.42E-08	3.0E-04	1.24E+04			2.1E-05		7.05E-06	3.0E-04	1.72E+03	3.18E-10	3.00E-04	1.15E+08	1.51E+03
INORG	Nickel	7440-02-0	A	1.00E+00	2.42E-08	2.0E-02	8.27E+05			8.0E-04					3.18E-10			8.27E+05
INORG	Selenium	7782-49-2	D	1.00E+00	2.42E-08	5.0E-03	2.07E+05			5.0E-03			1.8E-02		3.18E-10	1.75E-02	6.69E+09	2.07E+05
INORG	Silver	7440-22-4	D	1.00E+00	2.42E-08	5.0E-03	2.07E+05			2.0E-04			1.0E-05		3.18E-10	1.00E-05	3.82E+06	1.96E+05
INORG	Thallium	7440-28-0		1.00E+00	2.42E-08	7.0E-05	2.90E+03			7.0E-05			2.5E-04		3.18E-10	2.45E-04	9.36E+07	2.90E+03
INORG	Vanadium	7440-62-2		1.00E+00	2.42E-08	7.0E-03	2.90E+05			1.8E-04			2.5E-02		3.18E-10	2.45E-02	9.36E+09	2.90E+05
INORG	Zinc	7440-66-6	D	1.00E+00	2.42E-08	3.0E-01	1.24E+07			3.0E-01			1.1E+00		3.18E-10	1.05E+00	4.01E+11	1.24E+07

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Exposure of Residents to Soil in Occupied Parcels

**Attachment B.10: Area-Weighted Estimates of Risk and HQ for Resident Exposure to Off-Site Soil
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Background Conc (mg/kg)	Site-Specific Residential Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Residential Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P002	VOC	Ethyl Benzene	100-41-4	D	3	1	6.90E-04			5.86E+03		1.2E-07
P002	VOC	Methylene Chloride	75-09-2	B2	3	1	1.40E-03		1.40E+02	6.27E+03	1.0E-10	2.2E-07
P002	VOC	Toluene	108-88-3	D	3	1	1.00E-03			2.11E+03		4.7E-07
P002	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	8.20E-02		6.15E+00		1.3E-07	
P002	SVOC	Chrysene	218-01-9	B2	3	1	6.90E-02		6.11E+02		1.1E-09	
P002	SVOC	Fluoranthene	206-44-0	D	3	1	9.70E-02			7.66E+03		1.3E-05
P002	SVOC	Phenanthrene	85-01-8	D	3	1	1.20E-01			5.57E+03		2.2E-05
P002	SVOC	Pyrene	129-00-0	D	3	1	8.20E-02			5.76E+03		1.4E-05
P002	P/PCB	PCBs (total)	1336-36-3	B2	37	18	3.68E-01		2.11E+00	3.80E+00	1.7E-06	9.7E-02
P002	INORG	Aluminum	7429-90-5	D	3	3	9.41E+03	1.48E+04		2.73E+05		
P002	INORG	Arsenic	7440-38-2	A	3	3	1.59E+01	1.13E+01	3.89E+00	7.50E+01	1.2E-05	6.2E-02
P002	INORG	Barium	7440-39-3	D	3	3	1.86E+02	8.38E+01		1.92E+04		5.3E-03
P002	INORG	Beryllium	7440-41-7	B1	3	2	2.20E+00	5.70E-01	3.18E+04	5.47E+02	5.1E-10	3.0E-03
P002	INORG	Cadmium	7440-43-9	B1	3	2	3.30E+00	5.52E-01	4.25E+04	2.43E+02	6.5E-10	1.1E-02
P002	INORG	Chromium (total)	7440-47-3		3	3	2.23E+01	2.82E+01	6.37E+03	8.21E+02		
P002	INORG	Cobalt	7440-48-4	B1	3	2	2.68E+01	1.00E+01	2.73E+04	5.44E+03	6.1E-09	3.1E-03
P002	INORG	Copper	7440-50-8	D	3	3	1.33E+01	1.89E+01		1.09E+04		
P002	INORG	Iron	7439-89-6	D	3	3	8.43E+04	2.44E+04		8.21E+04		7.3E-01
P002	INORG	Lead	7439-92-1	B2	3	2	2.25E+01	2.00E+01				
P002	INORG	Manganese	7439-96-5	D	3	3	6.41E+02	6.76E+02		3.77E+04		
P002	INORG	Mercury	7439-97-6	D	3	2	1.90E-01	7.05E-02		3.97E+01		3.0E-03
P002	INORG	Nickel	7440-02-0	A	3	2	6.22E+01	1.83E+01	3.18E+05	5.48E+03	1.4E-09	8.0E-03
P002	INORG	Thallium	7440-28-0		3	2	2.10E+00	8.40E-01		1.92E+01		6.6E-02
P002	INORG	Vanadium	7440-62-2		3	3	4.28E+01	4.18E+01		1.92E+03		5.1E-04
P002	INORG	Zinc	7440-66-6	D	3	3	1.17E+02	5.48E+01		8.21E+04		7.6E-04
P024	P/PCB	PCBs (total)	1336-36-3	B2	19	15	3.01E+00		2.11E+00	3.80E+00	1.4E-05	7.9E-01
P028	VOC	Methyl Acetate	79-20-9		3	3	1.20E-02			1.21E+05		1.3E-07
P028	VOC	Methylcyclohexane	108-87-2		3	1	2.20E-03			4.59E+03		4.8E-07
P028	VOC	Toluene	108-88-3	D	3	1	9.20E-04			2.11E+03		4.4E-07
P028	SVOC	Benzo(a)anthracene	56-55-3	B2	3	1	1.20E-01		6.18E+00		1.9E-07	
P028	SVOC	Benzo(a)pyrene	50-32-8	B2	3	1	1.50E-01		6.20E-01		2.4E-06	
P028	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	1.60E-01		6.15E+00		2.6E-07	
P028	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	1	1.30E-01			5.82E+03		2.2E-05
P028	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	1	9.30E-02		6.20E+01		1.5E-08	
P028	SVOC	Chrysene	218-01-9	B2	3	1	1.40E-01		6.11E+02		2.3E-09	
P028	SVOC	Fluoranthene	206-44-0	D	3	1	2.30E-01			7.66E+03		3.0E-05
P028	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	1.10E-01		6.20E+00		1.8E-07	
P028	SVOC	Phenanthrene	85-01-8	D	3	1	1.10E-01			5.57E+03		2.0E-05
P028	SVOC	Pyrene	129-00-0	D	3	1	2.30E-01			5.76E+03		4.0E-05
P028	P/PCB	PCBs (total)	1336-36-3	B2	62	50	2.94E+00		2.11E+00	3.80E+00	1.4E-05	7.8E-01
P028	INORG	Aluminum	7429-90-5	D	3	3	8.94E+03	1.48E+04		2.73E+05		
P028	INORG	Arsenic	7440-38-2	A	3	3	6.70E+00	1.13E+01	3.89E+00	7.50E+01		
P028	INORG	Barium	7440-39-3	D	3	3	7.36E+01	8.38E+01		1.92E+04		
P028	INORG	Beryllium	7440-41-7	B1	3	3	3.65E-01	5.70E-01	3.18E+04	5.47E+02		
P028	INORG	Cadmium	7440-43-9	B1	3	3	6.65E-01	5.52E-01	4.25E+04	2.43E+02	2.7E-11	4.6E-04
P028	INORG	Chromium (total)	7440-47-3		3	3	3.89E+01	2.82E+01	6.37E+03	8.21E+02	1.7E-08	1.3E-02
P028	INORG	Cobalt	7440-48-4	B1	3	3	2.52E+01	1.00E+01	2.73E+04	5.44E+03	5.6E-09	2.8E-03
P028	INORG	Copper	7440-50-8	D	3	3	5.02E+01	1.89E+01		1.09E+04		2.9E-03
P028	INORG	Iron	7439-89-6	D	3	3	1.57E+04	2.44E+04		8.21E+04		
P028	INORG	Lead	7439-92-1	B2	3	3	2.63E+01	2.00E+01				
P028	INORG	Manganese	7439-96-5	D	3	3	8.94E+02	6.76E+02		3.77E+04		5.8E-03
P028	INORG	Mercury	7439-97-6	D	3	3	2.00E+00	7.05E-02		3.97E+01		4.9E-02
P028	INORG	Nickel	7440-02-0	A	3	3	6.14E+01	1.83E+01	3.18E+05	5.48E+03	1.4E-09	7.9E-03
P028	INORG	Selenium	7782-49-2	D	3	1	4.40E-01	3.96E-01		1.37E+03		3.2E-05
P028	INORG	Silver	7440-22-4	D	3	2	7.00E-01			1.36E+03		5.1E-04
P028	INORG	Vanadium	7440-62-2		3	3	2.22E+01	4.18E+01		1.92E+03		
P028	INORG	Zinc	7440-66-6	D	3	3	1.11E+02	5.48E+01		8.21E+04		6.8E-04
P030	VOC	Methyl Acetate	79-20-9		3	3	1.00E-02			1.21E+05		8.3E-08
P030	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	9.70E-02		6.15E+00		1.6E-07	
P030	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	8.70E-02		3.47E+02	4.16E+03	2.5E-09	2.1E-05
P030	SVOC	Chrysene	218-01-9	B2	3	1	8.50E-02		6.11E+02		1.4E-09	
P030	SVOC	Fluoranthene	206-44-0	D	3	1	1.30E-01			7.66E+03		1.7E-05
P030	SVOC	Pyrene	129-00-0	D	3	1	1.40E-01			5.76E+03		2.4E-05
P030	P/PCB	PCBs (total)	1336-36-3	B2	104	48	4.00E+00		2.11E+00	3.80E+00	1.9E-05	1.1E+00
P030	INORG	Aluminum	7429-90-5	D	3	3	9.86E+03	1.48E+04		2.73E+05		
P030	INORG	Arsenic	7440-38-2	A	3	3	6.90E+00	1.13E+01	3.89E+00	7.50E+01		
P030	INORG	Barium	7440-39-3	D	3	3	9.17E+01	8.38E+01		1.92E+04		4.1E-04

**Attachment B.10: Area-Weighted Estimates of Risk and HQ for Resident Exposure to Off-Site Soil
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Background Conc (mg/kg)	Site-Specific Residential Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Residential Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P030	INORG	Beryllium	7440-41-7	B1	3	3	4.20E-01	5.70E-01	3.18E+04	5.47E+02		
P030	INORG	Cadmium	7440-43-9	B1	3	3	7.90E-01	5.52E-01	4.25E+04	2.43E+02	5.6E-11	9.8E-04
P030	INORG	Chromium (total)	7440-47-3		3	3	1.78E+01	2.82E+01	6.37E+03	8.21E+02		
P030	INORG	Cobalt	7440-48-4	B1	3	3	1.16E+01	1.00E+01	2.73E+04	5.44E+03	5.7E-10	2.9E-04
P030	INORG	Copper	7440-50-8	D	3	3	3.74E+01	1.89E+01		1.09E+04		1.7E-03
P030	INORG	Iron	7439-89-6	D	3	3	1.75E+04	2.44E+04		8.21E+04		
P030	INORG	Lead	7439-92-1	B2	3	3	2.09E+01	2.00E+01				
P030	INORG	Manganese	7439-96-5	D	3	3	1.19E+03	6.76E+02		3.77E+04		1.4E-02
P030	INORG	Mercury	7439-97-6	D	3	2	2.80E-01	7.05E-02		3.97E+01		5.3E-03
P030	INORG	Nickel	7440-02-0	A	3	3	1.86E+01	1.83E+01	3.18E+05	5.48E+03	9.2E-12	5.4E-05
P030	INORG	Selenium	7782-49-2	D	3	1	5.60E-01	3.96E-01		1.37E+03		1.2E-04
P030	INORG	Silver	7440-22-4	D	3	1	2.20E-01			1.36E+03		1.6E-04
P030	INORG	Vanadium	7440-62-2		3	3	2.42E+01	4.18E+01		1.92E+03		
P030	INORG	Zinc	7440-66-6	D	3	3	8.94E+01	5.48E+01		8.21E+04		4.2E-04
P036	P/PCB	PCBs (total)	1336-36-3	B2	70	53	5.07E+00		2.11E+00	3.80E+00	2.4E-05	1.3E+00
P036	INORG	Aluminum	7429-90-5	D	3	3	9.18E+03	1.48E+04		2.73E+05		
P036	INORG	Arsenic	7440-38-2	A	3	3	6.80E+00	1.13E+01	3.89E+00	7.50E+01		
P036	INORG	Barium	7440-39-3	D	3	3	8.67E+01	8.38E+01		1.92E+04		1.5E-04
P036	INORG	Beryllium	7440-41-7	B1	3	3	6.70E-01	5.70E-01	3.18E+04	5.47E+02	3.1E-11	1.8E-04
P036	INORG	Cadmium	7440-43-9	B1	3	3	4.80E-01	5.52E-01	4.25E+04	2.43E+02		
P036	INORG	Chromium (total)	7440-47-3		3	3	1.40E+01	2.82E+01	6.37E+03	8.21E+02		
P036	INORG	Cobalt	7440-48-4	B1	3	3	9.80E+00	1.00E+01	2.73E+04	5.44E+03		
P036	INORG	Copper	7440-50-8	D	3	3	1.83E+01	1.89E+01		1.09E+04		
P036	INORG	Iron	7439-89-6	D	3	3	1.69E+04	2.44E+04		8.21E+04		
P036	INORG	Lead	7439-92-1	B2	3	3	1.84E+01	2.00E+01				
P036	INORG	Manganese	7439-96-5	D	3	3	9.19E+02	6.76E+02		3.77E+04		6.4E-03
P036	INORG	Mercury	7439-97-6	D	3	1	1.10E-01	7.05E-02		3.97E+01		9.9E-04
P036	INORG	Nickel	7440-02-0	A	3	3	1.56E+01	1.83E+01	3.18E+05	5.48E+03		
P036	INORG	Selenium	7782-49-2	D	3	2	6.90E-01	3.96E-01		1.37E+03		2.2E-04
P036	INORG	Vanadium	7440-62-2		3	3	2.37E+01	4.18E+01		1.92E+03		
P036	INORG	Zinc	7440-66-6	D	3	3	7.43E+01	5.48E+01		8.21E+04		2.4E-04
P040	VOC	Methyl Acetate	79-20-9		8	8	4.00E-02			1.21E+05		3.3E-07
P040	VOC	Methylcyclohexane	108-87-2		8	4	1.50E-03			4.59E+03		3.3E-07
P040	VOC	Toluene	108-88-3	D	8	3	1.40E-03			2.11E+03		6.6E-07
P040	P/PCB	PCBs (total)	1336-36-3	B2	90	78	1.31E-01		2.11E+00	3.80E+00	6.2E-07	3.5E-02
P040	INORG	Aluminum	7429-90-5	D	8	8	1.11E+04	1.48E+04		2.73E+05		
P040	INORG	Arsenic	7440-38-2	A	8	8	7.80E+00	1.13E+01	3.89E+00	7.50E+01		
P040	INORG	Barium	7440-39-3	D	8	8	1.07E+02	8.38E+01		1.92E+04		1.2E-03
P040	INORG	Beryllium	7440-41-7	B1	8	8	8.80E-01	5.70E-01	3.18E+04	5.47E+02	9.7E-11	5.7E-04
P040	INORG	Cadmium	7440-43-9	B1	8	8	6.30E-01	5.52E-01	4.25E+04	2.43E+02	1.8E-11	3.2E-04
P040	INORG	Chromium (total)	7440-47-3		8	8	1.63E+01	2.82E+01	6.37E+03	8.21E+02		
P040	INORG	Cobalt	7440-48-4	B1	8	8	1.03E+01	1.00E+01	2.73E+04	5.44E+03	9.3E-11	4.7E-05
P040	INORG	Copper	7440-50-8	D	8	8	1.86E+01	1.89E+01		1.09E+04		
P040	INORG	Iron	7439-89-6	D	8	8	2.02E+04	2.44E+04		8.21E+04		
P040	INORG	Lead	7439-92-1	B2	8	8	1.86E+01	2.00E+01				
P040	INORG	Manganese	7439-96-5	D	8	8	9.50E+02	6.76E+02		3.77E+04		7.3E-03
P040	INORG	Mercury	7439-97-6	D	8	8	8.80E-02	7.05E-02		3.97E+01		4.4E-04
P040	INORG	Nickel	7440-02-0	A	8	8	1.79E+01	1.83E+01	3.18E+05	5.48E+03		
P040	INORG	Selenium	7782-49-2	D	8	5	6.30E-01	3.96E-01		1.37E+03		1.7E-04
P040	INORG	Silver	7440-22-4	D	8	1	2.00E-01			1.36E+03		1.5E-04
P040	INORG	Vanadium	7440-62-2		8	8	2.88E+01	4.18E+01		1.92E+03		
P040	INORG	Zinc	7440-66-6	D	8	8	7.50E+01	5.48E+01		8.21E+04		2.5E-04
P057	P/PCB	PCBs (total)	1336-36-3	B2	13	11	2.88E-01		2.11E+00	3.80E+00	1.4E-06	7.6E-02
P072	P/PCB	PCBs (total)	1336-36-3	B2	11	4	9.09E-02		2.11E+00	3.80E+00	4.3E-07	2.4E-02
P081	P/PCB	PCBs (total)	1336-36-3	B2	12	10	3.32E-01		2.11E+00	3.80E+00	1.6E-06	8.8E-02
P396	P/PCB	PCBs (total)	1336-36-3	B2	6	1	1.28E+00		2.11E+00	3.80E+00	6.0E-06	3.4E-01
P398	VOC	Acetone	67-64-1	ID	43	10	3.20E-02			4.47E+04		7.2E-07
P398	VOC	Benzene	71-43-2	A	43	4	5.40E-03		1.01E+01	1.01E+02	5.3E-09	5.3E-05
P398	VOC	2-Butanone	78-93-3	ID	43	8	3.60E-03			5.95E+04		6.0E-08
P398	VOC	Cyclohexane	110-82-7	ID	43	2	2.40E-03			1.06E+04		2.3E-07
P398	VOC	1,1-Dichloroethene	75-35-4	C	43	1	3.90E-03			3.57E+02		1.1E-05
P398	VOC	Ethyl Benzene	100-41-4	D	43	3	2.00E-03			5.86E+03		3.4E-07
P398	VOC	2-Hexanone	591-78-6		43	1	4.50E-03			1.03E+01		4.4E-04
P398	VOC	Toluene	108-88-3	D	43	11	7.90E-03			2.11E+03		3.7E-06
P398	VOC	Trichlorofluoromethane	75-69-4		43	2	6.50E-03			1.10E+03		5.9E-06
P398	VOC	Xylenes (total)	1330-20-7	ID	43	1	1.20E-03			8.02E+02		1.5E-06
P398	SVOC	Acenaphthene	83-32-9		43	6	1.10E-01			9.85E+03		1.1E-05

**Attachment B.10: Area-Weighted Estimates of Risk and HQ for Resident Exposure to Off-Site Soil
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Background Conc (mg/kg)	Site-Specific Residential Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Residential Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P398	SVOC	Acenaphthylene	208-96-8	D	43	2	8.70E-01			4.89E+03		1.8E-04
P398	SVOC	Anthracene	120-12-7	D	43	11	8.80E-01			5.82E+04		1.5E-05
P398	SVOC	Benzo(a)anthracene	56-55-3	B2	43	20	2.60E+00		6.18E+00		4.2E-06	
P398	SVOC	Benzo(a)pyrene	50-32-8	B2	43	20	2.70E+00		6.20E-01		4.4E-05	
P398	SVOC	Benzo(b)fluoranthene	205-99-2	B2	43	20	4.75E+00		6.15E+00		7.7E-06	
P398	SVOC	Benzo(g,h,i)perylene	191-24-2	D	43	21	2.30E+00			5.82E+03		4.0E-04
P398	SVOC	Benzo(k)fluoranthene	207-08-9	B2	43	19	1.90E+00		6.20E+01		3.1E-07	
P398	SVOC	Biphenyl	92-52-4	D	43	1	9.95E-03			8.51E+03		1.2E-06
P398	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	43	4	8.90E-02		3.47E+02	4.16E+03	2.6E-09	2.1E-05
P398	SVOC	Carbazole	86-74-8	B2	43	2	3.00E-02		2.37E+02		1.3E-09	
P398	SVOC	Chrysene	218-01-9	B2	43	20	2.50E+00		6.11E+02		4.1E-08	
P398	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	43	14	7.10E-01		6.20E-01		1.1E-05	
P398	SVOC	Dibenzofuran	132-64-9	D	43	2	9.40E-02			8.03E+02		1.2E-04
P398	SVOC	Di-n-butylphthalate	84-74-2	D	43	5	3.70E-02			2.08E+04		1.8E-06
P398	SVOC	Fluoranthene	206-44-0	D	43	20	5.10E+00			7.66E+03		6.7E-04
P398	SVOC	Fluorene	86-73-7	D	43	3	3.10E-01			7.20E+03		4.3E-05
P398	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	43	20	2.05E+00		6.20E+00		3.3E-06	
P398	SVOC	2-Methylnaphthalene	91-57-6	ID	43	6	5.00E-02			2.24E+02		2.2E-04
P398	SVOC	Naphthalene	91-20-3	C	43	6	7.30E-02			2.20E+02		3.3E-04
P398	SVOC	Phenanthrene	85-01-8	D	43	18	2.00E+00			5.57E+03		3.6E-04
P398	SVOC	Pyrene	129-00-0	D	43	20	4.10E+00			5.76E+03		7.1E-04
P398	P/PCB	PCBs (total)	1336-36-3	B2	41	10	1.62E-02		2.11E+00	3.80E+00	7.6E-08	4.3E-03
P398	INORG	Aluminum	7429-90-5	D	43	43	2.24E+04	1.48E+04		2.73E+05		2.8E-02
P398	INORG	Antimony	7440-36-0	D	43	32	3.75E+00	4.40E-01		1.09E+02		3.0E-02
P398	INORG	Arsenic	7440-38-2	A	43	43	1.80E+01	1.13E+01	3.89E+00	7.50E+01	1.7E-05	9.0E-02
P398	INORG	Barium	7440-39-3	D	43	43	1.73E+02	8.38E+01		1.92E+04		4.7E-03
P398	INORG	Beryllium	7440-41-7	B1	43	43	3.40E+00	5.70E-01	3.18E+04	5.47E+02	8.9E-10	5.2E-03
P398	INORG	Cadmium	7440-43-9	B1	43	35	8.30E-01	5.52E-01	4.25E+04	2.43E+02	6.5E-11	1.1E-03
P398	INORG	Chromium (total)	7440-47-3		43	43	7.88E+01	2.82E+01	6.37E+03	8.21E+02	8.0E-08	6.2E-02
P398	INORG	Cobalt	7440-48-4	B1	43	43	3.39E+01	1.00E+01	2.73E+04	5.44E+03	8.7E-09	4.4E-03
P398	INORG	Copper	7440-50-8	D	43	43	2.15E+02	1.89E+01		1.09E+04		1.8E-02
P398	INORG	Cyanide (total)	57-12-5	D	43	1	1.90E-01			5.47E+03		3.5E-05
P398	INORG	Iron	7439-89-6	D	43	43	5.31E+04	2.44E+04		8.21E+04		3.5E-01
P398	INORG	Lead	7439-92-1	B2	43	43	9.46E+02	2.00E+01				
P398	INORG	Manganese	7439-96-5	D	43	43	1.51E+03	6.76E+02		3.77E+04		2.2E-02
P398	INORG	Mercury	7439-97-6	D	43	26	8.51E-01	7.05E-02		3.97E+01		2.0E-02
P398	INORG	Nickel	7440-02-0	A	43	43	9.87E+01	1.83E+01	3.18E+05	5.48E+03	2.5E-09	1.5E-02
P398	INORG	Selenium	7782-49-2	D	43	20	1.20E+00	3.96E-01		1.37E+03		5.9E-04
P398	INORG	Silver	7440-22-4	D	43	2	1.90E-01			1.36E+03		1.4E-04
P398	INORG	Thallium	7440-28-0		43	11	1.10E+00	8.40E-01		1.92E+01		1.4E-02
P398	INORG	Vanadium	7440-62-2		43	43	6.94E+01	4.18E+01		1.92E+03		1.4E-02
P398	INORG	Zinc	7440-66-6	D	43	43	2.47E+02	5.48E+01		8.21E+04		2.3E-03
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc Class - EPA Weight-of-Evidence Cancer Classification												
4. Concentrations are the maximum detected by area, except concentrations shaded and in bold are weighted averages as discussed in Section 4.2.1.												

**Attachment B.10: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
VOC	Acetone	67-64-1	5.75E-01	3.45E-03	7.95E-04	1.24E-01	1.01E-02	1.14E-05	1.11E-07	5.24E-05	4.01E-06	5.81E+01	2.30E+02	7.38E+02	1.00E+06	1.03E+05
VOC	Benzene	71-43-2	5.89E+01	3.53E-01	1.14E-01	8.80E-02	7.17E-03	9.80E-06	9.50E-08	1.14E-03	1.87E-05	7.81E+01	9.50E+01	4.10E+02	1.75E+03	8.30E+02
VOC	Bromodichloromethane	75-27-4	5.50E+01	3.30E-01	3.28E-02	2.98E-02	2.43E-03	1.06E-05	1.03E-07	1.21E-04	6.10E-06	1.64E+02	5.00E+01	4.53E+02	6.74E+03	2.94E+03
VOC	Bromomethane	74-83-9	1.05E+01	6.30E-02	1.28E-01	7.28E-02	5.93E-03	1.21E-05	1.17E-07	2.70E-03	2.88E-05	9.49E+01	1.62E+03	8.48E+03	1.52E+04	2.83E+03
VOC	2-Butanone	78-93-3	5.20E+00	3.12E-02	1.14E-03	9.49E-02	7.72E-03	9.80E-06	9.50E-08	4.52E-05	3.72E-06	7.21E+01	9.53E+01	3.80E+02	2.40E+05	3.14E+04
VOC	Carbon Disulfide	75-15-0	4.57E+01	2.74E-01	6.20E-01	1.04E-01	8.47E-03	1.00E-05	9.70E-08	7.09E-03	4.67E-05	7.61E+01	3.59E+02	1.51E+03	1.19E+03	5.83E+02
VOC	Chlorobenzene	108-90-7	2.19E+02	1.31E+00	7.60E-02	7.30E-02	5.94E-03	8.70E-06	8.44E-08	2.10E-04	8.02E-06	1.13E+02	1.20E+01	7.44E+01	4.72E+02	6.74E+02
VOC	Chloroethane	75-00-3	1.49E+01	8.94E-02	1.80E-01	1.10E-01	8.96E-03	1.53E-05	1.48E-07	4.80E-03	3.84E-05	6.45E+01	1.01E+03	3.59E+03	5.68E+03	1.26E+03
VOC	Chloroform	67-66-3	3.98E+01	2.39E-01	7.50E-02	1.04E-01	8.47E-03	1.00E-05	9.70E-08	1.19E-03	1.91E-05	1.19E+02	1.97E+02	1.30E+03	7.92E+03	2.79E+03
VOC	Chloromethane	74-87-3	7.80E+00	4.68E-02	1.80E-01	1.26E-01	1.03E-02	6.50E-06	6.30E-08	6.80E-03	4.57E-05	5.05E+01	4.30E+03	1.20E+04	5.33E+03	9.58E+02
VOC	Cumene	98-82-8	3.30E+03	1.98E+01	2.37E+01	6.50E-02	5.29E-03	7.81E-06	7.59E-08	3.41E-03	3.24E-05	1.20E+02	4.50E+00	2.99E+01	6.13E+01	1.23E+03
VOC	Cyclohexane	110-82-7	6.35E+02	3.81E+00	3.98E+00	1.10E-01	8.96E-03	9.14E-06	8.86E-08	5.07E-03	3.95E-05	8.42E+01	9.69E+01	4.50E+02	5.50E+01	2.56E+02
VOC	Dibromochloromethane	124-48-1	6.31E+01	3.79E-01	1.61E-02	1.96E-02	1.60E-03	1.05E-05	1.02E-07	3.54E-05	3.30E-06	2.08E+02	4.90E+00	5.64E+01	2.60E+03	1.25E+03
VOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	3.70E+00	3.90E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	3.81E-05	3.42E-06	1.47E+02	1.36E+00	1.10E+01	1.56E+02	5.94E+02
VOC	1,3-Dichlorobenzene	541-73-1	1.70E+03	1.02E+01	6.33E-02	4.14E-02	3.37E-03	8.85E-06	8.58E-08	1.37E-05	2.05E-06	1.47E+02	2.15E+00	1.75E+01	1.33E+02	1.37E+03
VOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	3.70E+00	4.98E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	4.86E-05	3.86E-06	1.47E+02	1.00E+00	8.12E+00	7.38E+01	2.81E+02
VOC	Dichlorodifluoromethane	75-71-8	1.30E+02	7.80E-01	7.01E+00	8.00E-02	6.51E-03	8.00E-06	7.76E-08	1.38E-02	6.50E-05	1.21E+02	4.85E+03	3.24E+04	2.80E+02	6.15E+02
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	1.90E-01	1.15E-01	7.42E-02	6.04E-03	1.05E-05	1.02E-07	1.48E-03	2.13E-05	9.90E+01	2.27E+02	1.24E+03	5.06E+03	1.57E+03
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.04E-01	2.01E-02	1.04E-01	8.47E-03	9.90E-06	9.60E-08	5.42E-04	1.29E-05	9.90E+01	7.89E+01	4.31E+02	8.52E+03	1.77E+03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.13E-01	8.35E-02	7.36E-02	5.99E-03	1.13E-05	1.10E-07	1.01E-03	1.76E-05	9.69E+01	2.03E+02	1.09E+03	3.50E+03	1.15E+03
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	3.15E-01	1.93E-01	7.07E-02	5.76E-03	1.19E-05	1.15E-07	1.63E-03	2.24E-05	9.69E+01	3.33E+02	1.78E+03	6.30E+03	2.84E+03
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.18E+00	1.62E-01	7.50E-02	6.11E-03	7.80E-06	7.56E-08	2.83E-04	9.32E-06	1.06E+02	9.60E+00	5.63E+01	1.69E+02	3.90E+02
VOC	2-Hexanone	591-78-6	1.48E+01	8.90E-02	3.58E-02	1.35E-01	1.10E-02	1.03E-05	9.99E-08	1.33E-03	2.02E-05	1.00E+02	1.16E+01	6.43E+01	1.75E+04	3.31E+03
VOC	Methyl Acetate	79-20-9	1.66E+00	9.98E-03	5.75E-05	1.23E-01	9.99E-03	1.10E-05	1.07E-07	4.13E-06	1.13E-06	7.41E+01	2.16E+02	8.85E+02	2.44E+05	2.66E+04
VOC	Methyl tert-butyl ether	1634-04-4	1.15E+01	6.89E-02	1.20E-02	8.59E-02	7.00E-03	1.01E-05	9.80E-08	3.26E-04	1.00E-05	8.82E+01	2.50E+02	1.22E+03	5.10E+04	8.70E+03
VOC	4-Methyl-2-pentanone	108-10-1	1.90E+01	1.14E-01	2.82E-03	7.50E-02	6.11E-03	7.80E-06	7.56E-08	5.36E-05	4.06E-06	1.00E+02	1.99E+01	1.10E+02	1.90E+04	4.06E+03
VOC	Methylcyclohexane	108-87-2	8.65E+02	5.19E+00	7.99E+00	9.86E-02	8.03E-03	8.52E-06	8.26E-08	6.73E-03	4.54E-05	9.82E+01	4.60E+01	2.50E+02	1.40E+01	9.72E+01
VOC	Methylene Chloride	75-09-2	1.17E+01	7.02E-02	4.49E-02	1.01E-01	8.22E-03	1.17E-05	1.13E-07	1.37E-03	2.05E-05	8.49E+01	4.33E+02	2.03E+03	1.30E+04	2.31E+03
VOC	Tetrachloroethene	127-18-4	1.55E+02	9.30E-01	3.77E-01	7.20E-02	5.86E-03	8.20E-06	7.95E-08	1.33E-03	2.02E-05	1.66E+02	1.86E+01	1.70E+02	2.00E+02	2.20E+02
VOC	Toluene	108-88-3	1.82E+02	1.09E+00	1.38E-01	8.70E-02	7.08E-03	8.60E-06	8.34E-08	5.24E-04	1.27E-05	9.21E+01	2.84E+01	1.45E+02	5.26E+02	6.40E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.07E+01	2.91E-02	3.00E-02	2.44E-03	8.23E-06	7.98E-08	4.37E-06	1.16E-06	1.81E+02	4.31E-01	4.32E+00	3.00E+02	3.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	6.60E-01	3.53E-01	7.80E-02	6.35E-03	8.80E-06	8.53E-08	1.80E-03	2.35E-05	1.33E+02	1.24E+02	9.12E+02	1.33E+03	1.10E+03
VOC	Trichloroethene	79-01-6	1.66E+02	9.96E-01	2.11E-01	7.90E-02	6.43E-03	9.10E-06	8.83E-08	7.92E-04	1.56E-05	1.31E+02	7.35E+01	5.33E+02	1.10E+03	1.25E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.30E+03	7.80E+00	9.83E+00	7.80E-02	6.35E-03	8.20E-06	7.95E-08	4.24E-03	3.61E-05	1.87E+02	3.32E+02	3.43E+03	1.70E+02	1.66E+03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.12E-01	5.55E-01	1.06E-01	8.63E-03	1.23E-05	1.19E-07	1.01E-02	5.56E-05	6.25E+01	2.98E+03	1.03E+04	2.76E+03	8.70E+02
VOC	Xylenes (total)	1330-20-7	3.86E+02	2.32E+00	1.38E-01	7.80E-02	6.35E-03	8.75E-06	8.48E-08	2.37E-04	8.54E-06	1.06E+02	7.99E+00	4.69E+01	1.75E+02	4.27E+02
SVOC	Acenaphthene	83-32-9	7.08E+03	4.25E+01	3.18E-03	4.21E-02	3.43E-03	7.69E-06	7.46E-08	1.71E-07	2.29E-07	1.54E+02	2.50E-03	2.13E-02	4.24E+00	1.81E+02
SVOC	Acenaphthylene	208-96-8	4.90E+03	2.94E+01	2.31E-03	4.42E-02	3.60E-03	7.44E-06	7.22E-08	1.88E-07	2.40E-07	1.52E+02	9.12E-04	7.67E-03	1.61E+01	4.75E+02
SVOC	Acetophenone	98-86-2	4.10E+01	2.46E-01	2.19E-04	8.00E-02	6.51E-03	8.00E-06	7.76E-08	2.88E-06	9.40E-07	1.20E+02	3.97E-01	2.64E+00	6.13E+03	2.12E+03
SVOC	Anthracene	120-12-7	2.95E+04	1.77E+02	1.34E-03	3.24E-02	2.64E-03	7.74E-06	7.51E-08	1.34E-08	6.43E-08	1.78E+02	2.67E-06	2.63E-05	4.34E-02	7.69E+00
SVOC	Benzaldehyde	100-52-7	2.85E+01	1.71E-01	4.86E-04	7.21E-02	5.87E-03	9.07E-06	8.80E-08	7.20E-06	1.49E-06	1.06E+02	9.00E-01	5.28E+00	3.00E+03	8.12E+02
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	2.39E+03	6.85E-05	5.10E-02	4.15E-03	9.00E-06	8.73E-08	1.03E-10	5.63E-09	1.32E+02	1.05E-07	1.32E-06	9.40E-03	2.24E+01
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	6.12E+03	2.32E-05	4.30E-02	3.50E-03	9.00E-06	8.73E-08	1.82E-11	2.36E-09	2.52E+02	5.49E-09	7.65E-08	1.62E-03	9.91E+00
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	7.38E+03	2.28E-03	2.26E-02	1.84E-03	5.56E-06	5.39E-08	3.80E-10	1.08E-08	2.52E+02	5.00E-07	6.97E-06	1.50E-03	1.11E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	1.60E+06	9.60E+03	2.88E-06	2.03E-02	1.65E-03	5.20E-06	5.04E-08	3.81E-12	1.08E-09	2.76E+02	1.01E-10	1.54E-09	2.60E-04	2.50E+00
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	7.38E+03	1.70E-05	2.26E-02	1.84E-03	5.56E-06	5.39E-08	7.64E-12	1.53E-09	2.52E+02	2.00E-09	2.79E-08	8.00E-04	5.90E+00
SVOC	Biphenyl	92-52-4	1.05E+04	6.29E+01	6.13E-03	4.04E-02	3.29E-03	8.15E-06	7.90E-08	2.13E-07	2.56E-07	1.54E+02	9.64E-03	8.21E-02	6.03E+00	3.80E+02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	9.06E+04	2.09E-06	3.51E-02	2.86E-03	3.66E-06	3.55E-08	3.03E-13	3.05E-10	1.39E+02	6.45E-06	1.39E-02	3.40E-01	3.08E+04
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	3.45E+02	2.59E-05	1.74E-02	1.42E-03	4.83E-06	4.68E-08	1.60E-10	7.01E-09	3.12E+02	8.25E-06	1.42E-04	2.69E+00	9.28E+02
SVOC	Caprolactam	105-60-2	6.51E-01	3.91E-03	5.17E-07	6.54E-02	5.33E-03	8.99E-06	8.72E-08	5.77E-07	4.21E-07	1.13E+02	1.60E-03	1.00E-02	7.72E+05	7.97E+04
SVOC	Carbazole	86-74-8	3.39E+03	2.03E+01	3.13E-07	3.90E-02	3.18E-03	7.03E-06	6.82E-08	2.24E-09	1.67E-08	1.67E+02	5.19E-07	4.79E-06	7.48E+00	1.53E+02
SVOC	4-Chloroaniline	106-47-8	6.61E+01	3.97E-01	6.80E-06	4.83E-02	3.93E-03	1.01E-05	9.80E-08	1.66E-07	2.26E-07	1.28E+02	1.23E-02	8.67E-02	5.30E+03	2.63E+03
SVOC	Chrysene	218-01-9	3.98E+05	2.39E+03	1.94E-03	2.48E-02	2.02E-03	6.21E-06	6.02E-08	1.10E-09	1.84E-08	2.28E+02	6.23E-09	7.86E-08	1.60E-03	3.82E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	3.80E+06	2.28E+04	3.02E-07	2.02E-02	1.64E-03	5.18E-06	5.02E-08	1.47E-12	6.73E-10	2.78E+02	1.00E-10	1.54E-09	2.49E-03	5.68E+01

**Attachment B.10: Normalized Vapor Flux from Exposed Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
SVOC	Dibenzofuran	132-64-9	1.12E+04	6.74E+01	2.57E-04	2.70E-02	2.20E-03	5.93E-06	5.75E-08	6.12E-09	4.33E-08	1.68E+02	1.80E-04	1.67E-03	1.00E+01	6.75E+02
SVOC	Diethylphthalate	84-66-2	2.88E+02	1.73E+00	9.25E-06	2.56E-02	2.08E-03	6.35E-06	6.16E-08	2.93E-08	9.48E-08	2.22E+02	1.65E-03	2.03E-02	1.08E+03	1.97E+03
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.25E+00	4.10E-05	5.84E-02	4.76E-03	8.69E-06	8.43E-08	1.37E-07	2.05E-07	1.22E+02	9.80E-02	6.62E-01	7.87E+03	1.07E+04
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.03E+02	1.93E-08	4.38E-02	3.57E-03	7.86E-06	7.62E-08	2.48E-10	8.73E-09	2.78E+02	7.30E-05	1.12E-03	1.12E+01	2.28E+03
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	4.15E-01	1.53E-05	3.27E-02	2.66E-03	7.26E-06	7.04E-08	1.43E-07	2.10E-07	1.82E+02	5.67E-04	5.71E-03	1.82E+02	9.36E+01
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	4.99E+05	1.37E-03	1.51E-02	1.23E-03	3.58E-06	3.47E-08	2.28E-12	8.37E-10	3.91E+02	2.60E-06	5.61E-05	2.00E-02	9.98E+03
SVOC	Fluoranthene	206-44-0	1.07E+05	6.42E+02	3.30E-04	3.02E-02	2.46E-03	6.35E-06	6.16E-08	9.00E-10	1.66E-08	2.02E+02	7.80E-06	8.72E-05	2.06E-01	1.32E+02
SVOC	Fluorene	86-73-7	1.38E+04	8.28E+01	1.31E-03	3.63E-02	2.96E-03	7.88E-06	7.64E-08	3.14E-08	9.82E-08	1.66E+02	6.33E-04	5.81E-03	1.98E+00	1.64E+02
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	3.30E+02	2.71E-02	5.42E-02	4.41E-03	5.91E-06	5.73E-08	2.40E-07	2.71E-07	2.85E+02	1.80E-05	2.83E-04	6.20E+00	2.05E+03
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	3.22E+02	1.67E-01	5.61E-02	4.57E-03	6.16E-06	5.97E-08	1.57E-06	6.94E-07	2.61E+02	2.21E-01	3.19E+00	3.23E+00	1.04E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.08E+04	3.28E-05	1.90E-02	1.55E-03	5.66E-06	5.49E-08	3.36E-12	1.02E-09	2.76E+02	1.00E-10	1.53E-09	2.20E-05	4.58E-01
SVOC	2-Methylnaphthalene	91-57-6	6.23E+03	3.74E+01	1.06E-02	9.86E-02	8.03E-03	7.75E-06	7.52E-08	1.50E-06	6.79E-07	1.42E+02	5.50E-02	4.32E-01	2.46E+01	9.22E+02
SVOC	Methylphenol (total)	1319-77-3	8.60E+01	5.16E-01	1.77E-05	7.40E-02	6.03E-03	1.00E-05	9.70E-08	2.19E-07	2.59E-07	1.08E+02			2.30E+04	1.42E+04
SVOC	Naphthalene	91-20-3	2.00E+03	1.20E+01	9.90E-03	5.90E-02	4.80E-03	7.50E-06	7.27E-08	2.61E-06	8.95E-07	1.28E+02	8.50E-02	6.02E-01	3.10E+01	3.75E+02
SVOC	Phenanthrene	85-01-8	1.40E+04	8.40E+01	4.76E-04	3.33E-02	2.71E-03	7.47E-06	7.24E-08	1.07E-08	5.74E-08	1.12E+02	1.12E-04	1.10E-03	1.15E+00	9.67E+01
SVOC	Phenol	108-95-2	2.88E+01	1.73E-01	8.15E-06	8.20E-02	6.68E-03	9.10E-06	8.83E-08	3.47E-07	3.26E-07	9.41E+01	2.76E-01	1.44E+00	8.28E+04	2.25E+04
SVOC	Pyrene	129-00-0	1.05E+05	6.30E+02	2.26E-04	2.72E-02	2.21E-03	7.24E-06	7.02E-08	5.99E-10	1.36E-08	2.02E+02	4.59E-06	5.13E-05	1.35E-01	8.51E+01
P/PCB	PCBs (total)	1336-36-3	2.45E+06	1.47E+04	4.09E-02	8.00E-02	6.51E-03	1.00E-05	9.70E-08	1.20E-08	6.07E-08		7.71E-05	1.40E-03	1.20E-02	1.76E+02
INORG	Aluminum	7429-90-5		1.50E+03									2.70E+01			
INORG	Antimony	7440-36-0		4.50E+01									1.22E+02			
INORG	Arsenic	7440-38-2		2.90E+01									7.49E+01			
INORG	Barium	7440-39-3		4.10E+01									1.37E+02			
INORG	Beryllium	7440-41-7		7.90E+02									9.01E+00			
INORG	Cadmium	7440-43-9		7.50E+01									1.12E+02			
INORG	Chromium (total)	7440-47-3		1.90E+01									5.20E+01			
INORG	Cobalt	7440-48-4		4.50E+01									5.89E+01			
INORG	Copper	7440-50-8		3.50E+01									6.35E+01			
INORG	Cyanide (amenable)	57-12-5A		9.90E+00									2.60E+01			
INORG	Cyanide (total)	57-12-5		9.90E+00									2.60E+01			
INORG	Iron	7439-89-6		2.50E+01									5.58E+01			
INORG	Lead	7439-92-1		9.00E+02									2.07E+02			
INORG	Manganese	7439-96-5		6.50E+01									5.49E+01			
INORG	Mercury	7439-97-6		1.00E+03	1.45E-01	3.07E-02	2.50E-03	6.30E-06	6.11E-08	2.40E-07	2.72E-07	2.01E+02	1.96E-03	2.17E-02	5.60E-02	5.60E+01
INORG	Nickel	7440-02-0		6.50E+01									5.87E+01			
INORG	Selenium	7782-49-2		5.00E+00									7.90E+01			
INORG	Silver	7440-22-4		8.30E+00									1.08E+02			
INORG	Thallium	7440-28-0		7.10E+01									2.04E+02			
INORG	Vanadium	7440-62-2		1.00E+03									5.09E+01			
INORG	Zinc	7440-66-6		6.20E+01									6.54E+01			
Notes:		kg/L	ρ _b	1.5E+00												
		kg/L	ρ _s	2.65E+00												
		L/L-soil	n	4.30E-01												
		L/L-soil	θ _w	0.15												
		L/L-soil	θ _a	0.28												
		unitless	f _{oc}	0.006												
Averaging period		year	ED	30												
		s	ED	9.46E+08												
Molar Gas Constant		L-mmHg/mole-°K	R	62.411												
Temperature		°C	T	10												
		°K	T	290												

**Attachment B.10: Air Dispersion Factor 'C/Q' for Inhalation of
Vapors and Particulates
Bedford, Indiana**

Exposure Area (m²)	C/Q (kg/m³ per kg/m²-s)
12,140	15.00

**Attachment B.10: Estimated Concentrations in Ambient Air from
Exposed Soil for Residents
Bedford, Indiana**

			Vapor			PM ₁₀	
	C/IQ (kg/m ³ per kg/m ² -s):		15.00			15.00	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
VOC	Acetone	67-64-1	1.00E+00	1.00E+00	6.01E-05	1.00E+00	3.18E-10
VOC	Benzene	71-43-2	1.00E+00	1.00E+00	2.81E-04	1.00E+00	3.18E-10
VOC	Bromodichloromethane	75-27-4	1.00E+00	1.00E+00	9.15E-05	1.00E+00	3.18E-10
VOC	Bromomethane	74-83-9	1.00E+00	1.00E+00	4.32E-04	1.00E+00	3.18E-10
VOC	2-Butanone	78-93-3	1.00E+00	1.00E+00	5.59E-05	1.00E+00	3.18E-10
VOC	Carbon Disulfide	75-15-0	1.00E+00	1.00E+00	7.00E-04	1.00E+00	3.18E-10
VOC	Chlorobenzene	108-90-7	1.00E+00	1.00E+00	1.20E-04	1.00E+00	3.18E-10
VOC	Chloroethane	75-00-3	1.00E+00	1.00E+00	5.76E-04	1.00E+00	3.18E-10
VOC	Chloroform	67-66-3	1.00E+00	1.00E+00	2.87E-04	1.00E+00	3.18E-10
VOC	Chloromethane	74-87-3	1.00E+00	1.00E+00	6.86E-04	1.00E+00	3.18E-10
VOC	Cumene	98-82-8	1.00E+00	1.00E+00	4.85E-04	1.00E+00	3.18E-10
VOC	Cyclohexane	110-82-7	1.00E+00	1.00E+00	5.92E-04	1.00E+00	3.18E-10
VOC	Dibromochloromethane	124-48-1	1.00E+00	1.00E+00	4.95E-05	1.00E+00	3.18E-10
VOC	1,2-Dichlorobenzene	95-50-1	1.00E+00	1.00E+00	5.13E-05	1.00E+00	3.18E-10
VOC	1,3-Dichlorobenzene	541-73-1	1.00E+00	1.00E+00	3.08E-05	1.00E+00	3.18E-10
VOC	1,4-Dichlorobenzene	106-46-7	1.00E+00	1.00E+00	5.80E-05	1.00E+00	3.18E-10
VOC	Dichlorodifluoromethane	75-71-8	1.00E+00	1.00E+00	9.75E-04	1.00E+00	3.18E-10
VOC	1,1-Dichloroethane	75-34-3	1.00E+00	1.00E+00	3.20E-04	1.00E+00	3.18E-10
VOC	1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	1.94E-04	1.00E+00	3.18E-10
VOC	cis-1,2-Dichloroethene	156-59-2	1.00E+00	1.00E+00	2.64E-04	1.00E+00	3.18E-10
VOC	trans-1,2-Dichloroethene	156-60-5	1.00E+00	1.00E+00	3.35E-04	1.00E+00	3.18E-10
VOC	Ethyl Benzene	100-41-4	1.00E+00	1.00E+00	1.40E-04	1.00E+00	3.18E-10
VOC	2-Hexanone	591-78-6	1.00E+00	1.00E+00	3.03E-04	1.00E+00	3.18E-10
VOC	Methyl Acetate	79-20-9	1.00E+00	1.00E+00	1.69E-05	1.00E+00	3.18E-10
VOC	Methyl tert-butyl ether	1634-04-4	1.00E+00	1.00E+00	1.50E-04	1.00E+00	3.18E-10
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+00	1.00E+00	6.08E-05	1.00E+00	3.18E-10
VOC	Methylcyclohexane	108-87-2	1.00E+00	1.00E+00	6.82E-04	1.00E+00	3.18E-10
VOC	Methylene Chloride	75-09-2	1.00E+00	1.00E+00	3.08E-04	1.00E+00	3.18E-10
VOC	Tetrachloroethene	127-18-4	1.00E+00	1.00E+00	3.03E-04	1.00E+00	3.18E-10
VOC	Toluene	108-88-3	1.00E+00	1.00E+00	1.90E-04	1.00E+00	3.18E-10
VOC	1,2,4-Trichlorobenzene	120-82-1	1.00E+00	1.00E+00	1.74E-05	1.00E+00	3.18E-10
VOC	1,1,1-Trichloroethane	71-55-6	1.00E+00	1.00E+00	3.52E-04	1.00E+00	3.18E-10
VOC	Trichloroethene	79-01-6	1.00E+00	1.00E+00	2.34E-04	1.00E+00	3.18E-10
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.00E+00	1.00E+00	5.41E-04	1.00E+00	3.18E-10
VOC	Vinyl Chloride	75-01-4	1.00E+00	1.00E+00	8.34E-04	1.00E+00	3.18E-10
VOC	Xylenes (total)	1330-20-7	1.00E+00	1.00E+00	1.28E-04	1.00E+00	3.18E-10
SVOC	Acenaphthene	83-32-9	1.00E+00	1.00E+00	3.43E-06	1.00E+00	3.18E-10
SVOC	Acenaphthylene	208-96-8	1.00E+00	1.00E+00	3.61E-06	1.00E+00	3.18E-10
SVOC	Acetophenone	98-86-2	1.00E+00	1.00E+00	1.41E-05	1.00E+00	3.18E-10
SVOC	Anthracene	120-12-7	1.00E+00	1.00E+00	9.64E-07	1.00E+00	3.18E-10
SVOC	Benzaldehyde	100-52-7	1.00E+00	1.00E+00	2.23E-05	1.00E+00	3.18E-10
SVOC	Benzo(a)anthracene	56-55-3	1.00E+00	1.00E+00	8.44E-08	1.00E+00	3.18E-10
SVOC	Benzo(a)pyrene	50-32-8	1.00E+00	1.00E+00	3.55E-08	1.00E+00	3.18E-10
SVOC	Benzo(b)fluoranthene	205-99-2	1.00E+00	1.00E+00	1.62E-07	1.00E+00	3.18E-10
SVOC	Benzo(g,h,i)perylene	191-24-2	1.00E+00	1.00E+00	1.62E-08	1.00E+00	3.18E-10
SVOC	Benzo(k)fluoranthene	207-08-9	1.00E+00	1.00E+00	2.30E-08	1.00E+00	3.18E-10
SVOC	Biphenyl	92-52-4	1.00E+00	1.00E+00	3.83E-06	1.00E+00	3.18E-10
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.00E+00	1.00E+00	4.58E-09	1.00E+00	3.18E-10
SVOC	Butylbenzylphthalate	85-68-7	1.00E+00	1.00E+00	1.05E-07	1.00E+00	3.18E-10

**Attachment B.10: Estimated Concentrations in Ambient Air from
Exposed Soil for Residents
Bedford, Indiana**

			Vapor			PM ₁₀	
	C/IQ (kg/m ³ per kg/m ² -s):		15.00			15.00	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
SVOC	Caprolactam	105-60-2	1.00E+00	1.00E+00	6.31E-06	1.00E+00	3.18E-10
SVOC	Carbazole	86-74-8	1.00E+00	1.00E+00	3.93E-07	1.00E+00	3.18E-10
SVOC	4-Chloroaniline	106-47-8	1.00E+00	1.00E+00	3.39E-06	1.00E+00	3.18E-10
SVOC	Chrysene	218-01-9	1.00E+00	1.00E+00	2.76E-07	1.00E+00	3.18E-10
SVOC	Dibenz(a,h)anthracene	53-70-3	1.00E+00	1.00E+00	1.01E-08	1.00E+00	3.18E-10
SVOC	Dibenzofuran	132-64-9	1.00E+00	1.00E+00	6.50E-07	1.00E+00	3.18E-10
SVOC	Diethylphthalate	84-66-2	1.00E+00	1.00E+00	1.42E-06	1.00E+00	3.18E-10
SVOC	2,4-Dimethylphenol	105-67-9	1.00E+00	1.00E+00	3.07E-06	1.00E+00	3.18E-10
SVOC	Di-n-butylphthalate	84-74-2	1.00E+00	1.00E+00	1.31E-07	1.00E+00	3.18E-10
SVOC	2,6-Dinitrotoluene	606-20-2	1.00E+00	1.00E+00	3.14E-06	1.00E+00	3.18E-10
SVOC	Di-n-octylphthalate	117-84-0	1.00E+00	1.00E+00	1.26E-08	1.00E+00	3.18E-10
SVOC	Fluoranthene	206-44-0	1.00E+00	1.00E+00	2.49E-07	1.00E+00	3.18E-10
SVOC	Fluorene	86-73-7	1.00E+00	1.00E+00	1.47E-06	1.00E+00	3.18E-10
SVOC	Hexachlorobenzene	118-74-1	1.00E+00	1.00E+00	4.07E-06	1.00E+00	3.18E-10
SVOC	Hexachlorobutadiene	87-68-3	1.00E+00	1.00E+00	1.04E-05	1.00E+00	3.18E-10
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.00E+00	4.58E-01	6.98E-09	1.00E+00	3.18E-10
SVOC	2-Methylnaphthalene	91-57-6	1.00E+00	1.00E+00	1.02E-05	1.00E+00	3.18E-10
SVOC	Methylphenol (total)	1319-77-3	1.00E+00	1.00E+00	3.89E-06	1.00E+00	3.18E-10
SVOC	Naphthalene	91-20-3	1.00E+00	1.00E+00	1.34E-05	1.00E+00	3.18E-10
SVOC	Phenanthrene	85-01-8	1.00E+00	1.00E+00	8.61E-07	1.00E+00	3.18E-10
SVOC	Phenol	108-95-2	1.00E+00	1.00E+00	4.90E-06	1.00E+00	3.18E-10
SVOC	Pyrene	129-00-0	1.00E+00	1.00E+00	2.03E-07	1.00E+00	3.18E-10
P/PCB	PCBs (total)	1336-36-3	1.00E+00	1.00E+00	9.10E-07	1.00E+00	3.18E-10
INORG	Aluminum	7429-90-5	1.00E+00			1.00E+00	3.18E-10
INORG	Antimony	7440-36-0	1.00E+00			1.00E+00	3.18E-10
INORG	Arsenic	7440-38-2	1.00E+00			1.00E+00	3.18E-10
INORG	Barium	7440-39-3	1.00E+00			1.00E+00	3.18E-10
INORG	Beryllium	7440-41-7	1.00E+00			1.00E+00	3.18E-10
INORG	Cadmium	7440-43-9	1.00E+00			1.00E+00	3.18E-10
INORG	Chromium (total)	7440-47-3	1.00E+00			1.00E+00	3.18E-10
INORG	Cobalt	7440-48-4	1.00E+00			1.00E+00	3.18E-10
INORG	Copper	7440-50-8	1.00E+00			1.00E+00	3.18E-10
INORG	Cyanide (amenable)	57-12-5A	1.00E+00			1.00E+00	3.18E-10
INORG	Cyanide (total)	57-12-5	1.00E+00			1.00E+00	3.18E-10
INORG	Iron	7439-89-6	1.00E+00			1.00E+00	3.18E-10
INORG	Lead	7439-92-1	1.00E+00			1.00E+00	3.18E-10
INORG	Manganese	7439-96-5	1.00E+00			1.00E+00	3.18E-10
INORG	Mercury	7439-97-6	1.00E+00	1.00E+00	4.07E-06	1.00E+00	3.18E-10
INORG	Nickel	7440-02-0	1.00E+00			1.00E+00	3.18E-10
INORG	Selenium	7782-49-2	1.00E+00			1.00E+00	3.18E-10
INORG	Silver	7440-22-4	1.00E+00			1.00E+00	3.18E-10
INORG	Thallium	7440-28-0	1.00E+00			1.00E+00	3.18E-10
INORG	Vanadium	7440-62-2	1.00E+00			1.00E+00	3.18E-10
INORG	Zinc	7440-66-6	1.00E+00			1.00E+00	3.18E-10
Notes:							
C _{source} = Minimum of Soil Concentration and C _{sat}							

**Attachment B.10: Risk Based Cancer Criteria for Exposure of Residents to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	1.57E-06							6.01E-05			3.18E-10			
VOC	Benzene	71-43-2	A	1.00E+00	1.57E-06	5.5E-02	1.2E+02			5.5E-02		2.81E-04	7.8E-03	1.1E+01	3.18E-10	7.8E-03	9.8E+06	1.0E+01
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	1.57E-06	6.2E-02	1.0E+02			6.2E-02		9.15E-05	1.8E-02	1.5E+01	3.18E-10	1.8E-02	4.3E+06	1.3E+01
VOC	Bromomethane	74-83-9	D	1.00E+00	1.57E-06							4.32E-04			3.18E-10			
VOC	2-Butanone	78-93-3	ID	1.00E+00	1.57E-06							5.59E-05			3.18E-10			
VOC	Carbon Disulfide	75-15-0		1.00E+00	1.57E-06							7.00E-04			3.18E-10			
VOC	Chlorobenzene	108-90-7	D	1.00E+00	1.57E-06							1.20E-04			3.18E-10			
VOC	Chloroethane	75-00-3		1.00E+00	1.57E-06	2.9E-03	2.2E+03			2.9E-03		5.76E-04			3.18E-10			2.2E+03
VOC	Chloroform	67-66-3	B2	1.00E+00	1.57E-06							2.87E-04	2.3E-02	3.7E+00	3.18E-10	2.3E-02	3.3E+06	3.7E+00
VOC	Chloromethane	74-87-3	D	1.00E+00	1.57E-06							6.86E-04			3.18E-10			
VOC	Cumene	98-82-8	D	1.00E+00	1.57E-06							4.85E-04			3.18E-10			
VOC	Cyclohexane	110-82-7	ID	1.00E+00	1.57E-06							5.92E-04			3.18E-10			
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	1.57E-06	8.4E-02	7.6E+01			8.4E-02		4.95E-05	2.4E-02	2.1E+01	3.18E-10	2.4E-02	3.2E+06	1.6E+01
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	1.57E-06							5.13E-05			3.18E-10			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	1.57E-06							3.08E-05			3.18E-10			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	1.57E-06	2.4E-02	2.7E+02			2.4E-02		5.80E-05	6.3E-03	6.7E+01	3.18E-10	6.3E-03	1.2E+07	5.3E+01
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	1.57E-06							9.75E-04			3.18E-10			
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	1.57E-06							3.20E-04			3.18E-10			
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	1.57E-06	9.1E-02	7.0E+01			9.1E-02		1.94E-04	2.6E-02	4.8E+00	3.18E-10	2.6E-02	2.9E+06	4.5E+00
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	1.57E-06							2.64E-04			3.18E-10			
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	1.57E-06							3.35E-04			3.18E-10			
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	1.57E-06							1.40E-04			3.18E-10			
VOC	2-Hexanone	591-78-6		1.00E+00	1.57E-06							3.03E-04			3.18E-10			
VOC	Methyl Acetate	79-20-9		1.00E+00	1.57E-06							1.69E-05			3.18E-10			
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	1.57E-06	3.3E-03	1.9E+03			3.3E-03		1.50E-04	1.0E-04	1.6E+03	3.18E-10	1.0E-04	7.6E+08	8.8E+02
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	1.57E-06							6.08E-05			3.18E-10			
VOC	Methylcyclohexane	108-87-2		1.00E+00	1.57E-06							6.82E-04			3.18E-10			
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	1.57E-06	7.5E-03	8.5E+02			7.5E-03		3.08E-04	4.7E-04	1.7E+02	3.18E-10	4.7E-04	1.6E+08	1.4E+02
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	1.57E-06	5.2E-02	1.2E+02			5.2E-02		3.03E-04	3.1E-03	2.6E+01	3.18E-10	3.1E-03	2.5E+07	2.2E+01
VOC	Toluene	108-88-3	D	1.00E+00	1.57E-06							1.90E-04			3.18E-10			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	1.57E-06							1.74E-05			3.18E-10			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	1.57E-06							3.52E-04			3.18E-10			
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	1.57E-06	1.1E-02	5.8E+02			1.1E-02		2.34E-04	1.7E-03	6.1E+01	3.18E-10	1.7E-03	4.5E+07	5.5E+01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	1.57E-06							5.41E-04			3.18E-10			
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	1.57E-06	1.4E+00	4.6E+00			1.4E+00		8.34E-04	8.8E-03	3.3E+00	3.18E-10	8.8E-03	8.7E+06	1.9E+00
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	1.57E-06							1.28E-04			3.18E-10			
SVOC	Acenaphthene	83-32-9		1.00E+00	1.57E-06			1.30E-01	6.43E-07			3.43E-06			3.18E-10			
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			3.61E-06			3.18E-10			
SVOC	Acetophenone	98-86-2	D	1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.41E-05			3.18E-10			
SVOC	Anthracene	120-12-7	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			9.64E-07			3.18E-10			
SVOC	Benzaldehyde	100-52-7		1.00E+00	1.57E-06			1.00E-01	4.94E-07			2.23E-05			3.18E-10			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	1.57E-06	7.3E-01	8.8E+00	1.30E-01	6.43E-07	7.3E-01	2.1E+01	8.44E-08	2.1E-01	1.4E+03	3.18E-10	2.1E-01	3.7E+05	6.2E+00
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	1.57E-06	7.3E+00	8.8E-01	1.30E-01	6.43E-07	7.3E+00	2.1E+00	3.55E-08	8.9E-01	7.7E+02	3.18E-10	8.9E-01	8.6E+04	6.2E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	1.57E-06	7.3E-01	8.8E+00	1.30E-01	6.43E-07	7.3E-01	2.1E+01	1.62E-07	2.1E-01	7.2E+02	3.18E-10	2.1E-01	3.7E+05	6.2E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			1.62E-08			3.18E-10			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	1.57E-06	7.3E-02	8.8E+01	1.30E-01	6.43E-07	7.3E-02	2.1E+02	2.30E-08	2.1E-02	5.1E+04	3.18E-10	2.1E-02	3.7E+06	6.2E+01
SVOC	Biphenyl	92-52-4	D	1.00E+00	1.57E-06			1.00E-01	4.94E-07			3.83E-06			3.18E-10			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	1.57E-06	1.4E-02	4.6E+02	1.00E-01	4.94E-07	1.4E-02	1.4E+03	4.58E-09	4.0E-03	1.3E+06	3.18E-10	4.0E-03	1.9E+07	3.5E+02
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.05E-07			3.18E-10			
SVOC	Caprolactam	105-60-2		1.00E+00	1.57E-06			1.00E-01	4.94E-07			6.31E-06			3.18E-10			
SVOC	Carbazole	86-74-8	B2	1.00E+00	1.57E-06	2.0E-02	3.2E+02	1.00E-01	4.94E-07	2.0E-02	1.0E+03	3.93E-07	5.7E-03	1.1E+04	3.18E-10	5.7E-03	1.3E+07	2.4E+02

**Attachment B.10: Risk Based Cancer Criteria for Exposure of Residents to Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	1.57E-06			1.00E-01	4.94E-07			3.39E-06			3.18E-10			
SVOC	Chrysene	218-01-9	B2	1.00E+00	1.57E-06	7.3E-03	8.8E+02	1.30E-01	6.43E-07	7.3E-03	2.1E+03	2.76E-07	2.1E-03	4.2E+04	3.18E-10	2.1E-03	3.7E+07	6.1E+02
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	1.57E-06	7.3E+00	8.8E-01	1.30E-01	6.43E-07	7.3E+00	2.1E+00	1.01E-08	2.1E+00	1.2E+03	3.18E-10	2.1E+00	3.7E+04	6.2E-01
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	1.57E-06			1.00E-01	4.94E-07			6.50E-07			3.18E-10			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.42E-06			3.18E-10			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	1.57E-06			1.00E-01	4.94E-07			3.07E-06			3.18E-10			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.31E-07			3.18E-10			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	1.57E-06	6.8E-01	9.4E+00	1.00E-01	4.94E-07	6.8E-01	3.0E+01	3.14E-06	1.9E-01	4.0E+01	3.18E-10	1.9E-01	3.9E+05	6.1E+00
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.26E-08			3.18E-10			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			2.49E-07			3.18E-10			
SVOC	Fluorene	86-73-7	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			1.47E-06			3.18E-10			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	1.57E-06	1.6E+00	4.0E+00	1.00E-01	4.94E-07	1.6E+00	1.3E+01	4.07E-06	4.6E-01	1.3E+01	3.18E-10	4.6E-01	1.7E+05	2.5E+00
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	1.57E-06	7.8E-02	8.2E+01	1.00E-01	4.94E-07	7.8E-02	2.6E+02	1.04E-05	2.2E-02	1.1E+02	3.18E-10	2.2E-02	3.5E+06	3.9E+01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	1.57E-06	7.3E-01	8.8E+00	1.30E-01	6.43E-07	7.3E-01	2.1E+01	6.98E-09	2.1E-01	1.7E+04	3.18E-10	2.1E-01	3.7E+05	6.2E+00
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	1.57E-06			1.00E-01	4.94E-07			1.02E-05			3.18E-10			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	1.57E-06			1.00E-01	4.94E-07			3.89E-06			3.18E-10			
SVOC	Naphthalene	91-20-3	C	1.00E+00	1.57E-06			1.30E-01	6.43E-07			1.34E-05			3.18E-10			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			8.61E-07			3.18E-10			
SVOC	Phenol	108-95-2	ID	1.00E+00	1.57E-06			1.00E-01	4.94E-07			4.90E-06			3.18E-10			
SVOC	Pyrene	129-00-0	D	1.00E+00	1.57E-06			1.30E-01	6.43E-07			2.03E-07			3.18E-10			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	1.57E-06	2.0E+00	3.2E+00	1.40E-01	6.92E-07	2.0E+00	7.2E+00	9.10E-07	5.7E-01	4.7E+01	3.18E-10	5.7E-01	1.3E+05	2.1E+00
INORG	Aluminum	7429-90-5	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Antimony	7440-36-0		1.00E+00	1.57E-06										3.18E-10			
INORG	Arsenic	7440-38-2	A	1.00E+00	1.57E-06	1.5E+00	4.3E+00	3.00E-02	1.48E-07	1.5E+00	4.5E+01		4.3E+00		3.18E-10	4.3E+00	1.8E+04	3.9E+00
INORG	Barium	7440-39-3	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Beryllium	7440-41-7	B1	1.00E+00	1.57E-06								2.4E+00		3.18E-10	2.4E+00	3.2E+04	3.2E+04
INORG	Cadmium	7440-43-9	B1	1.00E+00	1.57E-06			1.00E-03	4.94E-09				1.8E+00		3.18E-10	1.8E+00	4.2E+04	4.2E+04
INORG	Chromium (total)	7440-47-3		1.00E+00	1.57E-06								1.2E+01		3.18E-10	1.2E+01	6.4E+03	6.4E+03
INORG	Cobalt	7440-48-4	B1	1.00E+00	1.57E-06								2.8E+00		3.18E-10	2.8E+00	2.7E+04	2.7E+04
INORG	Copper	7440-50-8	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Cyanide (total)	57-12-5	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Iron	7439-89-6	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Lead	7439-92-1	B2	1.00E+00	1.57E-06										3.18E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Mercury	7439-97-6	D	1.00E+00	1.57E-06							4.07E-06			3.18E-10			
INORG	Nickel	7440-02-0	A	1.00E+00	1.57E-06								2.4E-01		3.18E-10	2.4E-01	3.2E+05	3.2E+05
INORG	Selenium	7782-49-2	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Silver	7440-22-4	D	1.00E+00	1.57E-06										3.18E-10			
INORG	Thallium	7440-28-0		1.00E+00	1.57E-06										3.18E-10			
INORG	Vanadium	7440-62-2		1.00E+00	1.57E-06										3.18E-10			
INORG	Zinc	7440-66-6	D	1.00E+00	1.57E-06										3.18E-10			

Attachment B.10: Risk Based Noncancer Criteria for Exposure of Residents to Soil
Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	3.65E-06	9.0E-01	2.46E+05			9.0E-01		6.01E-05	3.2E+00	5.46E+04	3.18E-10	3.15E+00	1.20E+12	4.47E+04
VOC	Benzene	71-43-2	A	1.00E+00	3.65E-06	4.0E-03	1.10E+03			4.0E-03		2.81E-04	3.0E-02	1.11E+02	3.18E-10	3.00E-02	1.15E+10	1.01E+02
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02		9.15E-05	7.0E-02	7.98E+02	3.18E-10	7.00E-02	2.67E+10	6.96E+02
VOC	Bromomethane	74-83-9	D	1.00E+00	3.65E-06	1.4E-03	3.83E+02			1.4E-03		4.32E-04	5.0E-03	1.21E+01	3.18E-10	5.00E-03	1.91E+09	1.17E+01
VOC	2-Butanone	78-93-3	ID	1.00E+00	3.65E-06	6.0E-01	1.64E+05			6.0E-01		5.59E-05	5.0E+00	9.33E+04	3.18E-10	5.00E+00	1.91E+12	5.95E+04
VOC	Carbon Disulfide	75-15-0		1.00E+00	3.65E-06	1.0E-01	2.74E+04			1.0E-01		7.00E-04	7.0E-01	1.04E+03	3.18E-10	7.00E-01	2.67E+11	1.00E+03
VOC	Chlorobenzene	108-90-7	D	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02		1.20E-04	6.0E-02	5.20E+02	3.18E-10	6.00E-02	2.29E+10	4.75E+02
VOC	Chloroethane	75-00-3		1.00E+00	3.65E-06	4.0E-01	1.10E+05			4.0E-01		5.76E-04	1.0E+01	1.81E+04	3.18E-10	1.00E+01	3.82E+12	1.55E+04
VOC	Chloroform	67-66-3	B2	1.00E+00	3.65E-06	1.0E-02	2.74E+03			1.0E-02		2.87E-04	5.0E-02	1.82E+02	3.18E-10	5.00E-02	1.91E+10	1.70E+02
VOC	Chloromethane	74-87-3	D	1.00E+00	3.65E-06							6.86E-04	9.0E-02	1.37E+02	3.18E-10	9.00E-02	3.44E+10	1.37E+02
VOC	Cumene	98-82-8	D	1.00E+00	3.65E-06	1.0E-01	2.74E+04			1.0E-01		4.85E-04	4.0E-01	8.59E+02	3.18E-10	4.00E-01	1.53E+11	8.33E+02
VOC	Cyclohexane	110-82-7	ID	1.00E+00	3.65E-06							5.92E-04	6.0E+00	1.06E+04	3.18E-10	6.00E+00	2.29E+12	1.06E+04
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02		4.95E-05	7.0E-02	1.48E+03	3.18E-10	7.00E-02	2.67E+10	1.16E+03
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	3.65E-06	9.0E-02	2.46E+04			9.0E-02		5.13E-05	2.0E-01	4.07E+03	3.18E-10	2.00E-01	7.64E+10	3.49E+03
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	3.65E-06	9.0E-04	2.46E+02			9.0E-04		3.08E-05	1.4E-01	4.74E+03	3.18E-10	1.40E-01	5.35E+10	2.34E+02
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	3.65E-06	3.0E-02	8.21E+03			3.0E-02		5.80E-05	8.0E-01	1.44E+04	3.18E-10	8.00E-01	3.06E+11	5.23E+03
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	3.65E-06	2.0E-01	5.48E+04			2.0E-01		9.75E-04	2.0E-01	2.14E+02	3.18E-10	2.00E-01	7.64E+10	2.13E+02
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	3.65E-06	1.0E-01	2.74E+04			1.0E-01		3.20E-04	5.0E-01	1.63E+03	3.18E-10	5.00E-01	1.91E+11	1.54E+03
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	3.65E-06	3.0E-02	8.21E+03			3.0E-02		1.94E-04	5.0E-03	2.69E+01	3.18E-10	5.00E-03	1.91E+09	2.69E+01
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	3.65E-06	1.0E-02	2.74E+03			1.0E-02		2.64E-04	3.5E-02	1.38E+02	3.18E-10	3.50E-02	1.34E+10	1.32E+02
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02		3.35E-04	7.0E-02	2.18E+02	3.18E-10	7.00E-02	2.67E+10	2.09E+02
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	3.65E-06	1.0E-01	2.74E+04			1.0E-01		1.40E-04	1.0E+00	7.46E+03	3.18E-10	1.00E+00	3.82E+11	5.86E+03
VOC	2-Hexanone	591-78-6		1.00E+00	3.65E-06	4.0E-02	1.10E+04			4.0E-02		3.03E-04	5.0E-03	1.72E+01	3.18E-10	5.00E-03	1.91E+09	1.72E+01
VOC	Methyl Acetate	79-20-9		1.00E+00	3.65E-06	1.0E+00	2.74E+05			1.0E+00		1.69E-05	3.5E+00	2.16E+05	3.18E-10	3.50E+00	1.34E+12	1.21E+05
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	3.65E-06							1.50E-04	3.0E+00	2.08E+04	3.18E-10	3.00E+00	1.15E+12	2.08E+04
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	3.65E-06							6.08E-05	3.0E+00	5.14E+04	3.18E-10	3.00E+00	1.15E+12	5.14E+04
VOC	Methylcyclohexane	108-87-2		1.00E+00	3.65E-06							6.82E-04	3.0E+00	4.59E+03	3.18E-10	3.00E+00	1.15E+12	4.59E+03
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	3.65E-06	6.0E-02	1.64E+04			6.0E-02		3.08E-04	3.0E+00	1.02E+04	3.18E-10	3.00E+00	1.15E+12	6.27E+03
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	3.65E-06	1.0E-02	2.74E+03			1.0E-02		3.03E-04	4.0E-01	1.38E+03	3.18E-10	4.00E-01	1.53E+11	9.16E+02
VOC	Toluene	108-88-3	D	1.00E+00	3.65E-06	2.0E-01	5.48E+03			2.0E-01		1.90E-04	4.0E-01	2.19E+03	3.18E-10	4.00E-01	1.53E+11	2.11E+03
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	3.65E-06	1.0E-02	2.74E+03			1.0E-02		1.74E-05	2.0E-01	1.20E+04	3.18E-10	2.00E-01	7.64E+10	2.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	3.65E-06	2.8E-01	7.67E+04			2.8E-01		3.52E-04	2.2E+00	6.51E+03	3.18E-10	2.20E+00	8.41E+11	6.00E+03
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	3.65E-06	6.0E-03	1.64E+03			6.0E-03		2.34E-04			3.18E-10			1.64E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	3.65E-06	3.0E+01	8.21E+06			3.0E+01		5.41E-04	3.0E+01	5.78E+04	3.18E-10	3.00E+01	1.15E+13	5.74E+04
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	3.65E-06	3.0E-03	8.21E+02			3.0E-03		8.34E-04	1.0E-01	1.25E+02	3.18E-10	1.00E-01	3.82E+10	1.09E+02
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	3.65E-06	2.0E-01	5.48E+04			2.0E-01		1.28E-04	1.0E-01	8.14E+02	3.18E-10	1.00E-01	3.82E+10	8.02E+02
SVOC	Acenaphthene	83-32-9		1.00E+00	3.65E-06	6.0E-02	1.64E+04	1.30E-01	1.50E-06	6.0E-02	4.00E+04	3.43E-06	2.1E-01	6.38E+04	3.18E-10	2.10E-01	8.02E+10	9.85E+03
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	3.65E-06	3.0E-02	8.21E+03	1.30E-01	1.50E-06	3.0E-02	2.00E+04	3.61E-06	1.1E-01	3.04E+04	3.18E-10	1.05E-01	4.01E+10	4.89E+03
SVOC	Acetophenone	98-86-2	D	1.00E+00	3.65E-06	1.0E-01	2.74E+04	1.00E-01	1.15E-06	1.0E-01	8.67E+04	1.41E-05	3.5E-01	2.59E+04	3.18E-10	3.50E-01	1.34E+11	1.15E+04
SVOC	Anthracene	120-12-7	D	1.00E+00	3.65E-06	3.0E-01	8.21E+04	1.30E-01	1.50E-06	3.0E-01	2.00E+05	9.64E-07			3.18E-10			5.82E+04
SVOC	Benzaldehyde	100-52-7		1.00E+00	3.65E-06	1.0E-01	2.74E+04	1.00E-01	1.15E-06	1.0E-01	8.67E+04	2.23E-05	3.5E-01	1.64E+04	3.18E-10	3.50E-01	1.34E+11	9.16E+03
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			8.44E-08			3.18E-10			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			3.55E-08			3.18E-10			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			1.62E-07			3.18E-10			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	3.65E-06	3.0E-02	8.21E+03	1.30E-01	1.50E-06	3.0E-02	2.00E+04	1.62E-08	1.1E-01	6.75E+06	3.18E-10	1.05E-01	4.01E+10	5.82E+03
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			2.30E-08			3.18E-10			
SVOC	Biphenyl	92-52-4	D	1.00E+00	3.65E-06	5.0E-02	1.37E+04	1.00E-01	1.15E-06	5.0E-02	4.34E+04	3.83E-06	1.8E-01	4.76E+04	3.18E-10	1.75E-01	6.69E+10	8.54E+03
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	3.65E-06	2.0E-02	5.48E+03	1.00E-01	1.15E-06	2.0E-02	1.73E+04	4.58E-09			3.18E-10			4.16E+03
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	3.65E-06	2.0E-01	5.48E+04	1.00E-01	1.15E-06	2.0E-01	1.73E+05	1.05E-07	7.0E-01	6.94E+06	3.18E-10	7.00E-01	2.67E+11	4.14E+04
SVOC	Caprolactam	105-60-2		1.00E+00	3.65E-06	5.0E-01	1.37E+05	1.00E-01	1.15E-06	5.0E-01	4.34E+05	6.31E-06	1.8E+00	2.89E+05	3.18E-10	1.75E+00	6.69E+11	7.65E+04
SVOC	Carbazole	86-74-8	B2	1.00E+00	3.65E-06			1.00E-01	1.15E-06			3.93E-07			3.18E-10			

Attachment B.10: Risk Based Noncancer Criteria for Exposure of Residents to Soil
Bedford, Indiana

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	3.65E-06	4.0E-03	1.10E+03	1.00E-01	1.15E-06	4.0E-03	3.47E+03	3.39E-06	1.4E-02	4.31E+03	3.18E-10	1.40E-02	5.35E+09	6.97E+02
SVOC	Chrysene	218-01-9	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			2.76E-07			3.18E-10			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			1.01E-08			3.18E-10			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	3.65E-06	4.0E-03	1.10E+03	1.00E-01	1.15E-06	4.0E-03	3.47E+03	6.50E-07	1.4E-02	2.25E+04	3.18E-10	1.40E-02	5.35E+09	8.03E+02
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	3.65E-06	8.0E-01	2.19E+05	1.00E-01	1.15E-06	8.0E-01	6.94E+05	1.42E-06	2.8E+00	2.05E+06	3.18E-10	2.80E+00	1.07E+12	1.54E+05
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	3.65E-06	2.0E-02	5.48E+03	1.00E-01	1.15E-06	2.0E-02	1.73E+04	3.07E-06	7.0E-02	2.38E+04	3.18E-10	7.00E-02	2.67E+10	3.54E+03
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	3.65E-06	1.0E-01	2.74E+04	1.00E-01	1.15E-06	1.0E-01	8.67E+04	1.31E-07			3.18E-10			2.08E+04
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	3.65E-06	1.0E-03	2.74E+02	1.00E-01	1.15E-06	1.0E-03	8.67E+02	3.14E-06	3.5E-03	1.16E+03	3.18E-10	3.50E-03	1.34E+09	1.76E+02
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	3.65E-06	4.0E-02	1.10E+04	1.00E-01	1.15E-06	4.0E-02	3.47E+04	1.26E-08			3.18E-10			8.32E+03
SVOC	Fluoranthene	206-44-0	D	1.00E+00	3.65E-06	4.0E-02	1.10E+04	1.30E-01	1.50E-06	4.0E-02	2.67E+04	2.49E-07	1.4E-01	5.85E+05	3.18E-10	1.40E-01	5.35E+10	7.66E+03
SVOC	Fluorene	86-73-7	D	1.00E+00	3.65E-06	4.0E-02	1.10E+04	1.30E-01	1.50E-06	4.0E-02	2.67E+04	1.47E-06	1.4E-01	9.91E+04	3.18E-10	1.40E-01	5.35E+10	7.20E+03
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	3.65E-06	8.0E-04	2.19E+02	1.00E-01	1.15E-06	8.0E-04	6.94E+02	4.07E-06			3.18E-10			1.66E+02
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	3.65E-06	3.0E-04	8.21E+01	1.00E-01	1.15E-06	3.0E-04	2.60E+02	1.04E-05			3.18E-10			6.24E+01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	3.65E-06			1.30E-01	1.50E-06			6.98E-09			3.18E-10			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	3.65E-06	4.0E-03	1.10E+03	1.00E-01	1.15E-06	4.0E-03	3.47E+03	1.02E-05	3.0E-03	3.07E+02	3.18E-10	3.00E-03	1.15E+09	2.24E+02
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	3.65E-06	5.0E-02	1.37E+04	1.00E-01	1.15E-06	5.0E-02	4.34E+04	3.89E-06	1.8E-01	4.69E+04	3.18E-10	1.75E-01	6.69E+10	8.51E+03
SVOC	Naphthalene	91-20-3	C	1.00E+00	3.65E-06	2.0E-02	5.48E+03	1.30E-01	1.50E-06	2.0E-02	1.33E+04	1.34E-05	3.0E-03	2.33E+02	3.18E-10	3.00E-03	1.15E+09	2.20E+02
SVOC	Phenanthrene	85-01-8	D	1.00E+00	3.65E-06	3.0E-02	8.21E+03	1.30E-01	1.50E-06	3.0E-02	2.00E+04	8.61E-07	1.1E-01	1.27E+05	3.18E-10	1.05E-01	4.01E+10	5.57E+03
SVOC	Phenol	108-95-2	ID	1.00E+00	3.65E-06	3.0E-01	8.21E+04	1.00E-01	1.15E-06	3.0E-01	2.60E+05	4.90E-06			3.18E-10			6.24E+04
SVOC	Pyrene	129-00-0	D	1.00E+00	3.65E-06	3.0E-02	8.21E+03	1.30E-01	1.50E-06	3.0E-02	2.00E+04	2.03E-07	1.1E-01	5.38E+05	3.18E-10	1.05E-01	4.01E+10	5.76E+03
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	3.65E-06	2.0E-05	5.48E+00	1.40E-01	1.61E-06	2.0E-05	1.24E+01	9.10E-07			3.18E-10			3.80E+00
INORG	Aluminum	7429-90-5	D	1.00E+00	3.65E-06	1.0E+00	2.74E+05			1.0E+00			5.0E-03		3.18E-10	5.00E-03	1.91E+09	2.74E+05
INORG	Antimony	7440-36-0		1.00E+00	3.65E-06	4.0E-04	1.10E+02			6.0E-05			1.4E-03		3.18E-10	1.40E-03	5.35E+08	1.09E+02
INORG	Arsenic	7440-38-2	A	1.00E+00	3.65E-06	3.0E-04	8.21E+01	3.00E-02	3.46E-07	3.0E-04	8.67E+02				3.18E-10			7.50E+01
INORG	Barium	7440-39-3	D	1.00E+00	3.65E-06	7.0E-02	1.92E+04			7.0E-02					3.18E-10			1.92E+04
INORG	Beryllium	7440-41-7	B1	1.00E+00	3.65E-06	2.0E-03	5.48E+02			1.4E-05			2.0E-05		3.18E-10	2.00E-05	7.64E+06	5.47E+02
INORG	Cadmium	7440-43-9	B1	1.00E+00	3.65E-06	1.0E-03	2.74E+02	1.00E-03	1.15E-08	2.5E-05	2.17E+03		2.0E-04		3.18E-10	2.00E-04	7.62E+07	2.43E+02
INORG	Chromium (total)	7440-47-3		1.00E+00	3.65E-06	3.0E-03	8.21E+02			7.5E-05					3.18E-10			8.21E+02
INORG	Cobalt	7440-48-4	B1	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02			2.0E-05		3.18E-10	2.00E-05	7.64E+06	5.47E+03
INORG	Copper	7440-50-8	D	1.00E+00	3.65E-06	4.0E-02	1.10E+04			4.0E-02			1.4E-01		3.18E-10	1.40E-01	5.35E+10	1.09E+04
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02			7.0E-02		3.18E-10	7.00E-02	2.67E+10	5.47E+03
INORG	Cyanide (total)	57-12-5	D	1.00E+00	3.65E-06	2.0E-02	5.48E+03			2.0E-02			7.0E-02		3.18E-10	7.00E-02	2.67E+10	5.47E+03
INORG	Iron	7439-89-6	D	1.00E+00	3.65E-06	3.0E-01	8.21E+04			3.0E-01					3.18E-10			8.21E+04
INORG	Lead	7439-92-1	B2	1.00E+00	3.65E-06										3.18E-10			
INORG	Manganese	7439-96-5	D	1.00E+00	3.65E-06	1.4E-01	3.83E+04			5.6E-03			5.0E-05		3.18E-10	5.00E-05	1.91E+07	3.82E+04
INORG	Mercury	7439-97-6	D	1.00E+00	3.65E-06	3.0E-04	8.21E+01			2.1E-05		4.07E-06	3.0E-04	7.68E+01	3.18E-10	3.00E-04	1.15E+08	3.97E+01
INORG	Nickel	7440-02-0	A	1.00E+00	3.65E-06	2.0E-02	5.48E+03			8.0E-04					3.18E-10			5.48E+03
INORG	Selenium	7782-49-2	D	1.00E+00	3.65E-06	5.0E-03	1.37E+03			5.0E-03			1.8E-02		3.18E-10	1.75E-02	6.69E+09	1.37E+03
INORG	Silver	7440-22-4	D	1.00E+00	3.65E-06	5.0E-03	1.37E+03			2.0E-04			1.0E-05		3.18E-10	1.00E-05	3.82E+06	1.37E+03
INORG	Thallium	7440-28-0		1.00E+00	3.65E-06	7.0E-05	1.92E+01			7.0E-05			2.5E-04		3.18E-10	2.45E-04	9.36E+07	1.92E+01
INORG	Vanadium	7440-62-2		1.00E+00	3.65E-06	7.0E-03	1.92E+03			1.8E-04			2.5E-02		3.18E-10	2.45E-02	9.36E+09	1.92E+03
INORG	Zinc	7440-66-6	D	1.00E+00	3.65E-06	3.0E-01	8.21E+04			3.0E-01			1.1E+00		3.18E-10	1.05E+00	4.01E+11	8.21E+04

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Exposure of Trespassers to Soil in Unoccupied Parcels

**Attachment B.11: Area-Weighted Estimates of Risk and HQ for Trespasser Exposure to Soil in Unoccupied Parcels
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Background Conc (mg/kg)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P023	P/PCB	PCBs (total)	1336-36-3	B2	47	44	1.22E+01		7.8E+02	6.0E+02	1.6E-07	2.0E-02
P025	P/PCB	PCBs (total)	1336-36-3	B2	43	41	8.18E+01		7.8E+02	6.0E+02	1.0E-06	1.4E-01
P027	P/PCB	PCBs (total)	1336-36-3	B2	16	4	1.75E-01		7.8E+02	6.0E+02	2.2E-09	2.9E-04
P029	P/PCB	PCBs (total)	1336-36-3	B2	3	3	5.52E-01		7.8E+02	6.0E+02	7.0E-09	9.3E-04
P037/P237	P/PCB	PCBs (total)	1336-36-3	B2	28	22	8.56E-01		7.8E+02	6.0E+02	1.1E-08	1.4E-03
P037/P237	INORG	Aluminum	7429-90-5	D	1	1	9.35E+03	1.48E+04		4.0E+07		
P037/P237	INORG	Arsenic	7440-38-2	A	1	1	6.70E+00	1.13E+01	1.8E+03	1.1E+04		
P037/P237	INORG	Barium	7440-39-3	D	1	1	8.52E+01	8.38E+01		2.9E+06		4.8E-07
P037/P237	INORG	Beryllium	7440-41-7	B1	1	1	6.40E-01	5.70E-01	3.7E+06	8.2E+04	1.9E-13	8.6E-07
P037/P237	INORG	Cadmium	7440-43-9	B1	1	1	3.90E-01	5.52E-01	5.0E+06	3.7E+04		
P037/P237	INORG	Chromium (total)	7440-47-3		1	1	1.34E+01	2.82E+01	7.4E+05	1.2E+05		
P037/P237	INORG	Cobalt	7440-48-4	B1	1	1	9.50E+00	1.00E+01	3.2E+06	7.5E+05		
P037/P237	INORG	Copper	7440-50-8	D	1	1	1.51E+01	1.89E+01		1.7E+06		
P037/P237	INORG	Iron	7439-89-6	D	1	1	1.65E+04	2.44E+04		1.2E+07		
P037/P237	INORG	Lead	7439-92-1	B2	1	1	1.63E+01	2.00E+01				
P037/P237	INORG	Manganese	7439-96-5	D	1	1	8.90E+02	6.76E+02		4.4E+06		4.8E-05
P037/P237	INORG	Nickel	7440-02-0	A	1	1	1.51E+01	1.83E+01	3.7E+07	8.3E+05		
P037/P237	INORG	Vanadium	7440-62-2		1	1	2.35E+01	4.18E+01		2.9E+05		
P037/P237	INORG	Zinc	7440-66-6	D	1	1	6.48E+01	5.48E+01		1.2E+07		8.1E-07
P038	VOC	Methyl Acetate	79-20-9		1	1	2.40E-02			4.3E+06		5.5E-09
P038	VOC	Toluene	108-88-3	D	1	1	1.80E-03			4.9E+04		3.7E-08
P038	P/PCB	PCBs (total)	1336-36-3	B2	31	22	2.65E+01		7.8E+02	6.0E+02	3.4E-07	4.4E-02
P038	INORG	Aluminum	7429-90-5	D	1	1	1.09E+04	1.48E+04		4.0E+07		
P038	INORG	Arsenic	7440-38-2	A	1	1	7.30E+00	1.13E+01	1.8E+03	1.1E+04		
P038	INORG	Barium	7440-39-3	D	1	1	9.65E+01	8.38E+01		2.9E+06		4.4E-06
P038	INORG	Beryllium	7440-41-7	B1	1	1	7.80E-01	5.70E-01	3.7E+06	8.2E+04	5.7E-13	2.6E-06
P038	INORG	Cadmium	7440-43-9	B1	1	1	6.60E-01	5.52E-01	5.0E+06	3.7E+04	2.2E-13	2.9E-06
P038	INORG	Chromium (total)	7440-47-3		1	1	1.64E+01	2.82E+01	7.4E+05	1.2E+05		
P038	INORG	Cobalt	7440-48-4	B1	1	1	9.40E+00	1.00E+01	3.2E+06	7.5E+05		
P038	INORG	Copper	7440-50-8	D	1	1	1.72E+01	1.89E+01		1.7E+06		
P038	INORG	Cyanide (amenable)	57-12-5A		1	1	7.90E-01			8.3E+05		9.5E-07
P038	INORG	Iron	7439-89-6	D	1	1	1.86E+04	2.44E+04		1.2E+07		
P038	INORG	Lead	7439-92-1	B2	1	1	1.98E+01	2.00E+01				
P038	INORG	Manganese	7439-96-5	D	1	1	7.06E+02	6.76E+02		4.4E+06		6.7E-06
P038	INORG	Mercury	7439-97-6	D	1	1	1.10E-01	7.05E-02		1.5E+03		2.6E-05
P038	INORG	Nickel	7440-02-0	A	1	1	1.67E+01	1.83E+01	3.7E+07	8.3E+05		
P038	INORG	Selenium	7782-49-2	D	1	1	6.60E-01	3.96E-01		2.1E+05		1.3E-06
P038	INORG	Vanadium	7440-62-2		1	1	2.78E+01	4.18E+01		2.9E+05		
P038	INORG	Zinc	7440-66-6	D	1	1	7.52E+01	5.48E+01		1.2E+07		1.6E-06
P039 central	VOC	Methyl Acetate	79-20-9		2	2	2.90E-01			4.3E+06		6.7E-08
P039 central	VOC	Methylcyclohexane	108-87-2		2	1	6.50E-03			1.0E+05		6.3E-08
P039 central	VOC	Toluene	108-88-3	D	2	1	5.25E-03			4.9E+04		1.1E-07
P039 central	P/PCB	PCBs (total)	1336-36-3	B2	189	154	7.68E+00		7.8E+02	6.0E+02	9.8E-08	1.3E-02
P039 central	INORG	Aluminum	7429-90-5	D	2	2	1.08E+04	1.48E+04		4.0E+07		
P039 central	INORG	Arsenic	7440-38-2	A	2	2	7.30E+00	1.13E+01	1.8E+03	1.1E+04		
P039 central	INORG	Barium	7440-39-3	D	2	2	9.77E+01	8.38E+01		2.9E+06		4.8E-06
P039 central	INORG	Beryllium	7440-41-7	B1	2	2	7.20E-01	5.70E-01	3.7E+06	8.2E+04	4.0E-13	1.8E-06
P039 central	INORG	Cadmium	7440-43-9	B1	2	2	7.00E-01	5.52E-01	5.0E+06	3.7E+04	3.0E-13	4.0E-06
P039 central	INORG	Chromium (total)	7440-47-3		2	2	1.77E+01	2.82E+01	7.4E+05	1.2E+05		
P039 central	INORG	Cobalt	7440-48-4	B1	2	2	1.22E+01	1.00E+01	3.2E+06	7.5E+05	6.8E-12	2.9E-06
P039 central	INORG	Copper	7440-50-8	D	2	2	2.64E+01	1.89E+01		1.7E+06		4.5E-06
P039 central	INORG	Cyanide (amenable)	57-12-5A		2	1	7.10E-01			8.3E+05		8.6E-07
P039 central	INORG	Iron	7439-89-6	D	2	2	1.85E+04	2.44E+04		1.2E+07		
P039 central	INORG	Lead	7439-92-1	B2	2	2	2.46E+01	2.00E+01				
P039 central	INORG	Manganese	7439-96-5	D	2	2	9.80E+02	6.76E+02		4.4E+06		6.8E-05
P039 central	INORG	Mercury	7439-97-6	D	2	2	2.20E-01	7.05E-02		1.5E+03		9.9E-05
P039 central	INORG	Nickel	7440-02-0	A	2	2	1.88E+01	1.83E+01	3.7E+07	8.3E+05	1.3E-13	6.0E-07
P039 central	INORG	Selenium	7782-49-2	D	2	2	7.70E-01	3.96E-01		2.1E+05		1.8E-06
P039 central	INORG	Silver	7440-22-4	D	2	1	3.45E-01			2.0E+05		1.8E-06
P039 central	INORG	Vanadium	7440-62-2		2	2	2.62E+01	4.18E+01		2.9E+05		
P039 central	INORG	Zinc	7440-66-6	D	2	2	1.03E+02	5.48E+01		1.2E+07		3.8E-06
P039 west	P/PCB	PCBs (total)	1336-36-3	B2	158	95	3.86E-01		7.8E+02	6.0E+02	4.9E-09	6.5E-04
P076(GM)	P/PCB	PCBs (total)	1336-36-3	B2	18	12	4.00E+00		7.8E+02	6.0E+02	5.1E-08	6.7E-03
P078	P/PCB	PCBs (total)	1336-36-3	B2	7	6	2.31E+00		7.8E+02	6.0E+02	2.9E-08	3.9E-03
P202/P203/P204	P/PCB	PCBs (total)	1336-36-3	B2	3	3	3.15E+00		7.8E+02	6.0E+02	4.0E-08	5.3E-03
P217	VOC	Acetone	67-64-1	ID	40	1	2.80E-03			1.2E+06		2.4E-09
P217	VOC	Methyl Acetate	79-20-9		40	5	1.08E-02			4.3E+06		2.5E-09
P217	VOC	4-Methyl-2-pentanone	108-10-1	ID	40	1	2.70E-03			1.2E+06		2.3E-09
P217	VOC	Methylcyclohexane	108-87-2		40	1	8.30E-04			1.0E+05		8.1E-09
P217	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		40	5	3.80E-03			1.3E+06		2.9E-09
P217	SVOC	Hexachlorobutadiene	87-68-3	C	41	1	4.80E-01		5.7E+03	9.7E+03	8.4E-10	4.9E-05
P217	P/PCB	PCBs (total)	1336-36-3	B2	41	11	2.98E-02		7.8E+02	6.0E+02	3.8E-10	5.0E-05
P217	INORG	Aluminum	7429-90-5	D	41	41	2.87E+05	1.48E+04		4.0E+07		6.7E-03
P217	INORG	Antimony	7440-36-0		41	10	1.50E+00	4.40E-01		1.7E+04		6.4E-05
P217	INORG	Arsenic	7440-38-2	A	41	41	3.66E+01	1.13E+01	1.8E+03	1.1E+04	1.4E-07	2.2E-03
P217	INORG	Barium	7440-39-3	D	41	41	1.32E+02	8.38E+01		2.9E+06		1.7E-05
P217	INORG	Beryllium	7440-41-7	B1	41	33	3.90E+00	5.70E-01	3.7E+06	8.2E+04	9.0E-12	4.1E-05
P217	INORG	Cadmium	7440-43-9	B1	41	18	2.04E+01	5.52E-01	5.0E+06	3.7E+04	4.0E-11	5.3E-04
P217	INORG	Chromium (total)	7440-47-3		41	41	1.08E+03	2.82E+01	7.4E+05	1.2E+05	1.4E-08	8.5E-03
P217	INORG	Cobalt	7440-48-4	B1	41	41	2.01E+01	1.00E+01	3.2E+06	7.5E+05	3.2E-11	1.3E-05
P217	INORG	Copper	7440-50-8	D	41	41	8.52E+04	1.89E+01		1.7E+06		5.1E-02
P217	INORG	Cyanide (total)	57-12-5	D	41	3	3.90E-01			8.3E+05		4.7E-07
P217	INORG	Iron	7439-89-6	D	41	41	4.81E+04	2.44E+04		1.2E+07		1.9E-03
P217	INORG	Lead	7439-92-1	B2	41	41	3.83E+02	2.00E+01				
P217	INORG	Manganese	7439-96-5	D	41	41	3.15E+03	6.76E+02		4.4E+06		5.6E-04

**Attachment B.11: Area-Weighted Estimates of Risk and HQ for Trespasser Exposure to Soil in Unoccupied Parcels
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Surf Soil Exposure Conc ⁴ (mg/kg)	Background Conc (mg/kg)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P217	INORG	Mercury	7439-97-6	D	41	39	1.30E+00	7.05E-02		1.5E+03		8.1E-04
P217	INORG	Nickel	7440-02-0	A	41	41	1.64E+02	1.83E+01	3.7E+07	8.3E+05	3.9E-11	1.8E-04
P217	INORG	Selenium	7782-49-2	D	41	10	3.80E+00	3.96E-01		2.1E+05		1.6E-05
P217	INORG	Silver	7440-22-4	D	41	2	1.36E+01			2.0E+05		6.9E-05
P217	INORG	Thallium	7440-28-0		41	17	4.70E+00	8.40E-01		2.9E+03		1.3E-03
P217	INORG	Vanadium	7440-62-2		41	41	1.09E+02	4.18E+01		2.9E+05		2.3E-04
P217	INORG	Zinc	7440-66-6	D	41	41	2.73E+04	5.48E+01		1.2E+07		2.2E-03
P364	P/PCB	PCBs (total)	1336-36-3	B2	11	11	1.30E+00		7.8E+02	6.0E+02	1.7E-08	2.2E-03
P384/P386	VOC	Acetone	67-64-1	ID	8	4	4.30E-02			1.2E+06		3.6E-08
P384/P386	VOC	Benzene	71-43-2	A	8	1	7.90E-04		7.4E+02	2.5E+03	1.1E-11	3.2E-07
P384/P386	VOC	2-Butanone	78-93-3	ID	8	3	7.20E-03			1.9E+06		3.7E-09
P384/P386	VOC	Cumene	98-82-8	D	8	2	4.10E-02			1.9E+04		2.1E-06
P384/P386	VOC	Cyclohexane	110-82-7	ID	8	1	6.50E-04			2.4E+05		2.7E-09
P384/P386	VOC	1,2-Dichlorobenzene	95-50-1	D	8	1	1.10E-03			8.9E+04		1.2E-08
P384/P386	VOC	1,3-Dichlorobenzene	541-73-1	D	8	1	8.30E-03			2.8E+04		3.0E-07
P384/P386	VOC	1,4-Dichlorobenzene	106-46-7	C	8	1	2.40E-02		4.3E+03	2.6E+05	5.5E-11	9.4E-08
P384/P386	VOC	Ethyl Benzene	100-41-4	D	8	2	2.80E-03			1.6E+05		1.7E-08
P384/P386	VOC	Methyl Acetate	79-20-9		8	1	1.90E-01			4.3E+06		4.4E-08
P384/P386	VOC	4-Methyl-2-pentanone	108-10-1	ID	8	2	2.50E-03			1.2E+06		2.2E-09
P384/P386	VOC	Methylcyclohexane	108-87-2		8	1	2.00E-03			1.0E+05		1.9E-08
P384/P386	VOC	Toluene	108-88-3	D	8	2	6.20E-03			4.9E+04		1.3E-07
P384/P386	VOC	1,2,4-Trichlorobenzene	120-82-1	D	8	1	2.20E-02			1.6E+05		1.3E-07
P384/P386	VOC	Xylenes (total)	1330-20-7	ID	8	1	1.30E-02			1.8E+04		7.1E-07
P384/P386	SVOC	Acenaphthene	83-32-9		8	2	2.10E-01			8.0E+05		2.6E-07
P384/P386	SVOC	Anthracene	120-12-7	D	8	3	1.20E-01			9.1E+06		1.3E-08
P384/P386	SVOC	Benzo(a)anthracene	56-55-3	B2	8	4	1.80E-01		2.8E+03		6.4E-10	
P384/P386	SVOC	Benzo(a)pyrene	50-32-8	B2	8	4	2.50E-01		2.9E+02		8.6E-09	
P384/P386	SVOC	Benzo(b)fluoranthene	205-99-2	B2	8	4	2.40E-01		2.8E+03		8.7E-10	
P384/P386	SVOC	Benzo(g,h,i)perylene	191-24-2	D	8	3	1.61E-01			9.1E+05		1.8E-07
P384/P386	SVOC	Benzo(k)fluoranthene	207-08-9	B2	8	3	9.90E-02		2.9E+04		3.4E-11	
P384/P386	SVOC	Biphenyl	92-52-4	D	8	2	4.90E-02			6.4E+05		7.6E-08
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	8	3	3.50E-01		1.6E+05	6.5E+05	2.2E-11	5.4E-07
P384/P386	SVOC	Butylbenzylphthalate	85-68-7	C	8	1	9.10E-02			6.2E+06		1.5E-08
P384/P386	SVOC	Carbazole	86-74-8	B2	8	2	9.10E-02		9.8E+04		9.3E-12	
P384/P386	SVOC	Chrysene	218-01-9	B2	8	4	2.75E-01		2.6E+05		1.0E-11	
P384/P386	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	8	2	2.90E-02		2.9E+02		1.0E-09	
P384/P386	SVOC	Dibenzofuran	132-64-9	D	8	2	2.00E-01			1.0E+05		1.9E-06
P384/P386	SVOC	2,4-Dimethylphenol	105-67-9		8	1	1.40E-01			2.9E+05		4.8E-07
P384/P386	SVOC	Di-n-octylphthalate	117-84-0		8	1	4.30E-01			1.3E+06		3.3E-07
P384/P386	SVOC	Fluoranthene	206-44-0	D	8	5	4.70E-01			1.1E+06		4.2E-07
P384/P386	SVOC	Fluorene	86-73-7	D	8	2	2.40E-01			7.9E+05		3.1E-07
P384/P386	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	8	3	9.90E-02		2.9E+03		3.4E-10	
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	8	2	1.90E-01			6.5E+03		2.9E-05
P384/P386	SVOC	Methylphenol (total)	1319-77-3		8	3	1.14E-01			6.4E+05		1.8E-07
P384/P386	SVOC	Naphthalene	91-20-3	C	8	2	5.70E-01			5.2E+03		1.1E-04
P384/P386	SVOC	Phenanthrene	85-01-8	D	8	4	5.60E-01			6.9E+05		8.1E-07
P384/P386	SVOC	Phenol	108-95-2	ID	8	2	1.10E+00			9.7E+06		1.1E-07
P384/P386	SVOC	Pyrene	129-00-0	D	8	4	3.40E-01			8.5E+05		4.0E-07
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	32	28	4.09E+00		7.8E+02	6.0E+02	5.2E-08	6.9E-03
P384/P386	INORG	Aluminum	7429-90-5	D	8	8	1.98E+04	1.48E+04		4.0E+07		1.2E-04
P384/P386	INORG	Antimony	7440-36-0		8	3	9.60E-01	4.40E-01		1.7E+04		3.1E-05
P384/P386	INORG	Arsenic	7440-38-2	A	8	8	1.64E+01	1.13E+01	1.8E+03	1.1E+04	2.9E-08	4.5E-04
P384/P386	INORG	Barium	7440-39-3	D	8	8	1.20E+02	8.38E+01		2.9E+06		1.3E-05
P384/P386	INORG	Beryllium	7440-41-7	B1	8	2	6.50E-01	5.70E-01	3.7E+06	8.2E+04	2.2E-13	9.8E-07
P384/P386	INORG	Cadmium	7440-43-9	B1	8	6	5.30E+00	5.52E-01	5.0E+06	3.7E+04	9.6E-12	1.3E-04
P384/P386	INORG	Chromium (total)	7440-47-3		8	8	3.63E+01	2.82E+01	7.4E+05	1.2E+05	1.1E-10	6.6E-05
P384/P386	INORG	Cobalt	7440-48-4	B1	8	8	1.51E+01	1.00E+01	3.2E+06	7.5E+05	1.6E-11	6.8E-06
P384/P386	INORG	Copper	7440-50-8	D	8	8	3.63E+02	1.89E+01		1.7E+06		2.1E-04
P384/P386	INORG	Iron	7439-89-6	D	8	8	3.39E+04	2.44E+04		1.2E+07		7.7E-04
P384/P386	INORG	Lead	7439-92-1	B2	8	8	1.83E+02	2.00E+01				
P384/P386	INORG	Manganese	7439-96-5	D	8	8	8.65E+02	6.76E+02		4.4E+06		4.2E-05
P384/P386	INORG	Mercury	7439-97-6	D	8	8	1.20E+00	7.05E-02		1.5E+03		7.5E-04
P384/P386	INORG	Nickel	7440-02-0	A	8	8	5.76E+01	1.83E+01	3.7E+07	8.3E+05	1.1E-11	4.7E-05
P384/P386	INORG	Selenium	7782-49-2	D	8	1	9.30E-01	3.96E-01		2.1E+05		2.6E-06
P384/P386	INORG	Silver	7440-22-4	D	8	1	4.20E-01			2.0E+05		2.1E-06
P384/P386	INORG	Thallium	7440-28-0		8	2	1.10E+00	8.40E-01		2.9E+03		9.0E-05
P384/P386	INORG	Vanadium	7440-62-2		8	8	5.18E+01	4.18E+01		2.9E+05		3.4E-05
P384/P386	INORG	Zinc	7440-66-6	D	8	8	7.91E+02	5.48E+01		1.2E+07		5.9E-05
P393	P/PCB	PCBs (total)	1336-36-3	B2	19	13	1.03E-01		7.8E+02	6.0E+02	1.3E-09	1.7E-04
P400	P/PCB	PCBs (total)	1336-36-3	B2	15	15	1.09E+00		7.8E+02	6.0E+02	1.4E-08	1.8E-03
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc Class - EPA Weight-of-Evidence Cancer Classification												
4. Concentrations are the maximum detected by area, except concentrations shaded and in bold are weighted averages as discussed in Section 4.2.1.												

A T T A C H M E N T B . 1 2

Exposure of Trespassers to Spring Water in Unoccupied Parcels

**Attachment B.12: Upper-Bound Estimates of Risk and HQ for Trespasser Exposure to Spring Water in Unoccupied Parcels
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Spring Water Conc (mg/L)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
P027	P/PCB	PCBs (total)	1336-36-3	B2	4	1	1.11E-03	2.9E-03	1.7E-03	3.8E-06	6.6E-01
P384/P386	VOC	Benzene	71-43-2	A	1	1	1.70E-04	9.7E+00	3.1E+01	1.8E-10	5.6E-06
P384/P386	VOC	Ethyl Benzene	100-41-4	D	1	1	3.30E-04		2.2E+02		1.5E-06
P384/P386	VOC	Methyl tert-butyl ether	1634-04-4		1	1	3.50E-04	5.8E+02	5.4E+04	6.0E-12	6.5E-09
P384/P386	VOC	Toluene	108-88-3	D	1	1	9.10E-04		6.7E+02		1.4E-06
P384/P386	VOC	Xylenes (total)	1330-20-7	ID	1	1	4.40E-04		3.5E+02		1.3E-06
P384/P386	SVOC	Acenaphthene	83-32-9		1	1	9.50E-04		5.7E+01		1.7E-05
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	3.50E-03	3.3E-01	1.3E+00	1.1E-07	2.7E-03
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	1	1	8.20E-04		3.7E+00		2.2E-04
P384/P386	SVOC	Naphthalene	91-20-3	C	1	1	4.30E-03		2.4E+01		1.8E-04
P384/P386	SVOC	Phenanthrene	85-01-8	D	1	1	9.90E-04		1.5E+01		6.7E-05
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	1	1	6.03E-04	2.9E-03	1.7E-03	2.1E-06	3.6E-01
P384/P386	INORG	Aluminum	7429-90-5	D	1	1	1.30E+00		8.7E+04		1.5E-05
P384/P386	INORG	Barium	7440-39-3	D	1	1	2.60E-01		6.1E+03		4.3E-05
P384/P386	INORG	Chromium (total)	7440-47-3		1	1	3.60E-03		1.4E+01		2.5E-04
P384/P386	INORG	Iron	7439-89-6	D	1	1	4.26E+01		2.6E+04		1.6E-03
P384/P386	INORG	Manganese	7439-96-5	D	1	1	3.10E+00		1.0E+03		3.0E-03
P384/P386	INORG	Mercury	7439-97-6	D	1	1	4.40E-04		2.5E+00		1.8E-04
P384/P386	INORG	Vanadium	7440-62-2		1	1	2.20E-03		3.5E+01		6.4E-05
P384/P386	INORG	Zinc	7440-66-6	D	1	1	1.00E-01		3.2E+04		3.2E-06
Note:											
1. Only constituents detected at each area are shown.											
2. Carc class - EPA Weight-of-Evidence Cancer Classification											

A T T A C H M E N T B . 1 3

Exposure of Trespassers to Stream Bank Soil

**Attachment B.13: Bounding Estimates of Risk and HQ for Trespasser Exposure to Stream Bank Soil
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Maximum Detected Conc (mg/kg)	Background Conc (mg/kg)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁶) (mg/kg)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
WS10-12	VOC	Methyl Acetate	79-20-9		8.4E-03			6.7E+07		1.3E-10
WS10-12	P/PCB	PCBs (total)	1336-36-3	B2	5.0E+02		3.0E+03	1.8E+03	1.6E-06	2.8E-01
WS10-12	INORG	Aluminum	7429-90-5	D	1.1E+04	1.5E+04		1.2E+08		
WS10-12	INORG	Arsenic	7440-38-2	A	7.3E+00	1.1E+01	5.3E+03	3.4E+04		
WS10-12	INORG	Barium	7440-39-3	D	9.8E+01	8.4E+01		8.7E+06		1.6E-06
WS10-12	INORG	Beryllium	7440-41-7	B1	7.2E-01	5.7E-01	1.1E+08	2.5E+05	1.3E-14	6.1E-07
WS10-12	INORG	Cadmium	7440-43-9	B1	7.0E-01	5.5E-01	1.5E+08	1.1E+05	1.0E-14	1.3E-06
WS10-12	INORG	Chromium (total)	7440-47-3		1.8E+01	2.8E+01	2.2E+07	3.7E+05		
WS10-12	INORG	Cobalt	7440-48-4	B1	1.2E+01	1.0E+01	9.5E+07	2.4E+06	2.3E-13	9.0E-07
WS10-12	INORG	Copper	7440-50-8	D	2.4E+01	1.9E+01		5.0E+06		1.0E-06
WS10-12	INORG	Iron	7439-89-6	D	1.9E+04	2.4E+04		3.7E+07		
WS10-12	INORG	Lead	7439-92-1	B2	2.5E+01	2.0E+01				
WS10-12	INORG	Manganese	7439-96-5	D	9.8E+02	6.8E+02		1.6E+07		1.9E-05
WS10-12	INORG	Mercury	7439-97-6	D	2.2E-01	7.1E-02		2.2E+04		6.9E-06
WS10-12	INORG	Nickel	7440-02-0	A	1.9E+01	1.8E+01	1.1E+09	2.5E+06	4.4E-15	2.0E-07
WS10-12	INORG	Selenium	7782-49-2	D	6.2E-01	4.0E-01		6.2E+05		3.6E-07
WS10-12	INORG	Vanadium	7440-62-2		2.6E+01	4.2E+01		8.7E+05		
WS10-12	INORG	Zinc	7440-66-6	D	1.0E+02	5.5E+01		3.7E+07		1.3E-06
Notes:										
1. Only constituents detected at each area are shown.										
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.										
3. Carc class - EPA Weight-of-Evidence Cancer Classification										
4. WS10-12 represents the area within a half mile of warning signs (WS) 10 to 12 and 30 feet from the stream, including the area between the northern and southern branches.										

**Attachment B.13: Normalized Vapor Flux from Exposed Stream Bank Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
VOC	Acetone	67-64-1	5.75E-01	3.45E-03	7.95E-04	1.24E-01	1.01E-02	1.14E-05	1.11E-07	5.24E-05	6.94E-06	5.81E+01	2.30E+02	7.38E+02	1.00E+06	1.03E+05
VOC	Benzene	71-43-2	5.89E+01	3.53E-01	1.14E-01	8.80E-02	7.17E-03	9.80E-06	9.50E-08	1.14E-03	3.24E-05	7.81E+01	9.50E+01	4.10E+02	1.75E+03	8.30E+02
VOC	Bromodichloromethane	75-27-4	5.50E+01	3.30E-01	3.28E-02	2.98E-02	2.43E-03	1.06E-05	1.03E-07	1.21E-04	1.06E-05	1.64E+02	5.00E+01	4.53E+02	6.74E+03	2.94E+03
VOC	Bromomethane	74-83-9	1.05E+01	6.30E-02	1.28E-01	7.28E-02	5.93E-03	1.21E-05	1.17E-07	2.70E-03	4.98E-05	9.49E+01	1.62E+03	8.48E+03	1.52E+04	2.83E+03
VOC	2-Butanone	78-93-3	5.20E+00	3.12E-02	1.14E-03	9.49E-02	7.72E-03	9.80E-06	9.50E-08	4.52E-05	6.45E-06	7.21E+01	9.53E+01	3.80E+02	2.40E+05	3.14E+04
VOC	Carbon Disulfide	75-15-0	4.57E+01	2.74E-01	6.20E-01	1.04E-01	8.47E-03	1.00E-05	9.70E-08	7.09E-03	8.08E-05	7.61E+01	3.59E+02	1.51E+03	1.19E+03	5.83E+02
VOC	Chlorobenzene	108-90-7	2.19E+02	1.31E+00	7.60E-02	7.30E-02	5.94E-03	8.70E-06	8.44E-08	2.10E-04	1.39E-05	1.13E+02	1.20E+01	7.44E+01	4.72E+02	6.74E+02
VOC	Chloroethane	75-00-3	1.49E+01	8.94E-02	1.80E-01	1.10E-01	8.96E-03	1.53E-05	1.48E-07	4.80E-03	6.65E-05	6.45E+01	1.01E+03	3.59E+03	5.68E+03	1.26E+03
VOC	Chloroform	67-66-3	3.98E+01	2.39E-01	7.50E-02	1.04E-01	8.47E-03	1.00E-05	9.70E-08	1.19E-03	3.32E-05	1.19E+02	1.97E+02	1.30E+03	7.92E+03	2.79E+03
VOC	Chloromethane	74-87-3	7.80E+00	4.68E-02	1.80E-01	1.26E-01	1.03E-02	6.50E-06	6.30E-08	6.80E-03	7.92E-05	5.05E+01	4.30E+03	1.20E+04	5.33E+03	9.58E+02
VOC	Cumene	98-82-8	3.30E+03	1.98E+01	2.37E+01	6.50E-02	5.29E-03	7.83E-06	7.59E-08	3.41E-03	5.60E-05	1.20E+02	4.50E+00	2.99E+01	6.13E+01	1.23E+03
VOC	Cyclohexane	110-82-7	6.35E+02	3.81E+00	3.98E+00	1.10E-01	8.96E-03	9.14E-06	8.86E-08	5.07E-03	6.84E-05	8.42E+01	9.69E+01	4.50E+02	5.50E+01	2.56E+02
VOC	Dibromochloromethane	124-48-1	6.31E+01	3.79E-01	1.61E-02	1.96E-02	1.60E-03	1.05E-05	1.02E-07	3.54E-05	5.71E-06	2.08E+02	4.90E+00	5.64E+01	2.60E+03	1.25E+03
VOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	3.70E+00	3.90E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	3.81E-05	5.92E-06	1.47E+02	1.36E+00	1.10E+01	1.56E+02	5.94E+02
VOC	1,3-Dichlorobenzene	541-73-1	1.70E+03	1.02E+01	6.33E-02	4.14E-02	3.37E-03	8.85E-06	8.58E-08	1.37E-05	3.55E-06	1.47E+02	2.15E+00	1.75E+01	1.33E+02	1.37E+03
VOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	3.70E+00	4.98E-02	6.90E-02	5.62E-03	7.90E-06	7.66E-08	4.86E-05	6.69E-06	1.47E+02	1.00E+00	8.12E+00	7.38E+01	2.81E+02
VOC	Dichlorodifluoromethane	75-71-8	1.30E+02	7.80E-01	7.01E+00	8.00E-02	6.51E-03	8.00E-06	7.76E-08	1.38E-02	1.13E-04	1.21E+02	4.85E+03	3.24E+04	2.80E+02	6.15E+02
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	1.90E-01	1.15E-01	7.42E-02	6.04E-03	1.05E-05	1.02E-07	1.48E-03	3.69E-05	9.90E+01	2.27E+02	1.24E+03	5.06E+03	1.57E+03
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.04E-01	2.01E-02	1.04E-01	8.47E-03	9.90E-06	9.60E-08	5.42E-04	2.23E-05	9.90E+01	7.89E+01	4.31E+02	8.52E+03	1.77E+03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.13E-01	8.35E-02	7.36E-02	5.99E-03	1.13E-05	1.10E-07	1.01E-03	3.05E-05	9.69E+01	2.03E+02	1.09E+03	3.50E+03	1.15E+03
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	3.15E-01	1.93E-01	7.07E-02	5.76E-03	1.19E-05	1.15E-07	1.63E-03	3.87E-05	9.69E+01	3.33E+02	1.78E+03	6.30E+03	2.84E+03
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.18E+00	1.62E-01	7.50E-02	6.11E-03	7.80E-06	7.56E-08	2.83E-04	1.61E-05	1.06E+02	9.60E+00	5.63E+01	1.69E+02	3.90E+02
VOC	2-Hexanone	591-78-6	1.48E+01	8.90E-02	3.58E-02	1.35E-01	1.10E-02	1.03E-05	9.99E-08	1.33E-03	3.50E-05	1.00E+02	1.16E+01	6.43E+01	1.75E+04	3.31E+03
VOC	Methyl Acetate	79-20-9	1.66E+00	9.98E-03	5.75E-05	1.23E-01	9.99E-03	1.10E-05	1.07E-07	4.13E-06	1.95E-06	7.41E+01	2.16E+02	8.85E+02	2.44E+05	2.66E+04
VOC	Methyl tert-butyl ether	1634-04-4	1.15E+01	6.89E-02	1.20E-02	8.59E-02	7.00E-03	1.01E-05	9.80E-08	3.26E-04	1.73E-05	8.82E+01	2.50E+02	1.22E+03	5.10E+04	8.70E+03
VOC	4-Methyl-2-pentanone	108-10-1	1.90E+01	1.14E-01	2.82E-03	7.50E-02	6.11E-03	7.80E-06	7.56E-08	5.36E-05	7.02E-06	1.00E+02	1.99E+01	1.10E+02	1.90E+04	4.06E+03
VOC	Methylcyclohexane	108-87-2	8.65E+02	5.19E+00	7.99E+00	9.86E-02	8.03E-03	8.52E-06	8.26E-08	6.73E-03	7.87E-05	9.82E+01	4.60E+01	2.50E+02	1.40E+01	9.72E+01
VOC	Methylene Chloride	75-09-2	1.17E+01	7.02E-02	4.49E-02	1.01E-01	8.22E-03	1.17E-05	1.13E-07	1.37E-03	3.56E-05	8.49E+01	4.33E+02	2.03E+03	1.30E+04	2.31E+03
VOC	Tetrachloroethene	127-18-4	1.55E+02	9.30E-01	3.77E-01	7.20E-02	5.86E-03	8.20E-06	7.95E-08	1.33E-03	3.50E-05	1.66E+02	1.86E+01	1.70E+02	2.00E+02	2.20E+02
VOC	Toluene	108-88-3	1.82E+02	1.09E+00	1.36E-01	8.70E-02	7.08E-03	8.60E-06	8.34E-08	5.24E-04	2.20E-05	9.21E+01	2.84E+01	1.45E+02	5.26E+02	6.40E+02
VOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.07E+01	2.91E-02	3.00E-02	2.44E-03	8.23E-06	7.98E-08	4.37E-06	2.01E-06	1.81E+02	4.31E-01	4.32E+00	3.00E+02	3.23E+03
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	6.60E-01	3.53E-01	7.80E-02	6.35E-03	8.80E-06	8.53E-08	1.80E-03	4.07E-05	1.33E+02	1.24E+02	9.12E+02	1.33E+03	1.10E+03
VOC	Trichloroethene	79-01-6	1.66E+02	9.96E-01	2.11E-01	7.90E-02	6.43E-03	9.10E-06	8.83E-08	7.92E-04	2.70E-05	1.31E+02	7.35E+01	5.33E+02	1.10E+03	1.25E+03
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.30E+03	7.80E+00	9.83E+00	7.80E-02	6.35E-03	8.20E-06	7.95E-08	4.24E-03	6.25E-05	1.87E+02	3.32E+02	3.43E+03	1.70E+02	1.66E+03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.12E-01	5.55E-01	1.06E-01	8.63E-03	1.23E-05	1.19E-07	1.01E-02	9.63E-05	6.25E+01	2.98E+03	1.03E+04	2.76E+03	8.70E+02
VOC	Xylenes (total)	1330-20-7	3.86E+02	2.32E+00	1.38E-01	7.80E-02	6.35E-03	8.75E-06	8.48E-08	2.37E-04	1.48E-05	1.06E+02	7.99E+00	4.69E+01	1.75E+02	4.27E+02
SVOC	Acenaphthene	83-32-9	7.08E+03	4.25E+01	3.18E-03	4.21E-02	3.43E-03	7.69E-06	7.46E-08	1.71E-07	3.96E-07	1.54E+02	2.50E-03	2.13E-02	4.24E+00	1.81E+02
SVOC	Acenaphthylene	208-96-8	4.90E+03	2.94E+01	2.31E-03	4.42E-02	3.60E-03	7.44E-06	7.22E-08	1.88E-07	4.16E-07	1.52E+02	9.12E-04	7.67E-03	1.61E+01	4.75E+02
SVOC	Acetophenone	98-86-2	4.10E+01	2.46E-01	2.19E-04	8.00E-02	6.51E-03	8.00E-06	7.76E-08	2.88E-06	1.63E-06	1.20E+02	3.97E-01	2.64E+00	6.13E+03	2.12E+03
SVOC	Anthracene	120-12-7	2.95E+04	1.77E+02	1.34E-03	3.24E-02	2.64E-03	7.74E-06	7.51E-08	1.34E-08	1.11E-07	1.78E+02	2.67E-06	2.63E-05	4.34E-02	7.69E+00
SVOC	Benzaldehyde	100-52-7	2.85E+01	1.71E-01	4.86E-04	7.21E-02	5.87E-03	9.07E-06	8.80E-08	7.20E-06	2.58E-06	1.06E+02	9.00E-01	5.28E+00	3.00E+03	8.12E+02
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	2.39E+03	6.85E-05	5.10E-02	4.15E-03	9.00E-06	8.73E-08	1.03E-10	9.74E-09	2.28E+02	1.05E-07	1.32E-02	6.40E-03	2.24E+01
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	6.12E+03	2.32E-05	4.30E-02	3.50E-03	9.00E-06	8.73E-08	1.82E-11	4.10E-09	2.52E+02	5.49E-09	7.65E-08	1.62E-03	9.91E+00
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	7.38E+03	2.28E-03	2.26E-02	1.84E-03	5.56E-06	5.39E-08	3.80E-10	1.87E-08	2.52E+02	5.00E-07	6.97E-06	1.50E-03	1.11E+01
SVOC	Benzo(g,h,i)perylene	191-24-2	1.60E+06	9.60E+03	2.88E-06	2.03E-02	1.65E-03	5.20E-06	5.04E-08	3.81E-12	1.87E-09	2.76E+02	1.01E-10	1.54E-09	2.60E-04	2.50E+00
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	7.38E+03	1.70E-05	2.26E-02	1.84E-03	5.56E-06	5.39E-08	7.64E-12	2.65E-09	2.52E+02	2.00E-09	2.79E-08	8.00E-04	5.90E+00
SVOC	Biphenyl	92-52-4	1.05E+04	6.29E+01	6.13E-03	4.04E-02	3.29E-03	8.15E-06	7.90E-08	2.13E-07	4.43E-07	1.54E+02	9.64E-03	8.21E-02	6.03E+00	3.80E+02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	9.06E+04	2.09E-06	3.51E-02	2.86E-03	3.66E-06	3.55E-08	3.03E-13	5.28E-10	3.91E+02	6.45E-06	1.39E-02	3.40E-01	3.08E+04
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	3.45E+02	2.59E-05	1.74E-02	1.42E-03	4.83E-06	4.68E-08	1.60E-10	1.21E-08	3.12E+02	8.25E-06	1.42E-04	2.69E+00	9.28E+02
SVOC	Caprolactam	105-60-2	6.51E-01	3.91E-03	5.17E-07	6.54E-02	5.33E-03	8.99E-06	8.72E-08	5.77E-07	7.29E-07	1.13E+02	1.60E-03	1.00E-02	7.72E+05	7.97E+04
SVOC	Carbazole	86-74-8	3.39E+03	2.03E+01	3.13E-07	3.90E-02	3.18E-03	7.03E-06	6.82E-08	2.24E-09	4.54E-08	1.67E+02	5.19E-07	4.79E-06	7.48E+00	1.53E+02
SVOC	4-Chloroaniline	106-47-8	6.61E+01	3.97E-01	6.80E-06	4.83E-02	3.93E-03	1.01E-05	9.80E-08	1.66E-07	3.92E-07	1.28E+02	1.23E-02	8.67E-02	5.30E+03	2.63E+03
SVOC	Chrysene	218-01-9	3.98E+05	2.39E+03	1.94E-03	2.48E-02	2.02E-03	6.21E-06	6.02E-08	1.10E-09	3.19E-08	2.28E+02	6.23E-09	7.86E-08	1.60E-03	3.82E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	3.80E+06	2.28E+04	3.02E-07	2.02E-02	1.64E-03	5.18E-06	5.02E-08	1.47E-12	1.16E-09	2.78E+02	1.00E-10	1.54E-09	2.49E-03	5.68E+01

**Attachment B.13: Normalized Vapor Flux from Exposed Stream Bank Soil to Ambient Air and Soil Saturation Concentration
Bedford, Indiana**

Chem Group	Chemical	CASRN	K _{oc} (L/kg)	K _d (L/kg)	H (unitless)	D _{air} (cm ² /s)	D _G (cm ² /s)	D _{water} (cm ² /s)	D _L (cm ² /s)	D _E (cm ² /s)	J _G (mg/m ² -s per mg/kg)	MW (g/mole)	VP (mm Hg)	v* (mg/L)	s (mg/L)	C _{sat} (mg/kg)
SVOC	Dibenzofuran	132-64-9	1.12E+04	6.74E+01	2.57E-04	2.70E-02	2.20E-03	5.93E-06	5.75E-08	6.12E-09	7.51E-08	1.68E+02	1.80E-04	1.67E-03	1.00E+01	6.75E+02
SVOC	Diethylphthalate	84-66-2	2.88E+02	1.73E+00	9.25E-06	2.56E-02	2.08E-03	6.35E-06	6.16E-08	2.93E-08	1.64E-07	2.22E+02	1.65E-03	2.03E-02	1.08E+03	1.97E+03
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.25E+00	4.10E-05	5.84E-02	4.76E-03	8.69E-06	8.43E-08	1.37E-07	3.55E-07	1.22E+02	9.80E-02	6.62E-01	7.87E+03	1.07E+04
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.03E+02	1.93E-08	4.38E-02	3.57E-03	7.86E-06	7.62E-08	2.48E-10	1.51E-08	2.78E+02	7.30E-05	1.12E-03	1.12E+01	2.28E+03
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	4.15E-01	1.53E-05	3.27E-02	2.66E-03	7.26E-06	7.04E-08	1.43E-07	3.63E-07	1.82E+02	5.67E-04	5.71E-03	1.82E+02	9.36E+01
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	4.99E+05	1.37E-03	1.51E-02	1.23E-03	3.58E-06	3.47E-08	2.28E-12	1.45E-09	3.91E+02	2.60E-06	5.61E-05	2.00E-02	9.98E+03
SVOC	Fluoranthene	206-44-0	1.07E+05	6.42E+02	3.30E-04	3.02E-02	2.46E-03	6.35E-06	6.16E-08	9.00E-10	2.88E-08	2.02E+02	7.80E-06	8.72E-05	2.06E-01	1.32E+02
SVOC	Fluorene	86-73-7	1.38E+04	8.28E+01	1.31E-03	3.63E-02	2.96E-03	7.88E-06	7.64E-08	3.14E-08	1.70E-07	1.66E+02	6.33E-04	5.81E-03	1.98E+00	1.64E+02
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	3.30E+02	2.71E-02	5.42E-02	4.41E-03	5.91E-06	5.73E-08	2.40E-07	4.70E-07	2.85E+02	1.80E-05	2.83E-04	6.20E+00	2.05E+03
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	3.22E+02	1.67E-01	5.61E-02	4.57E-03	6.16E-06	5.97E-08	1.57E-06	1.20E-06	2.61E+02	2.21E-01	3.19E+00	3.23E+00	1.04E+03
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.08E+04	3.28E-05	1.90E-02	1.55E-03	5.66E-06	5.49E-08	3.36E-12	1.76E-09	2.76E+02	1.00E-10	1.53E-09	2.20E-05	4.58E-01
SVOC	2-Methylnaphthalene	91-57-6	6.23E+03	3.74E+01	1.06E-02	9.86E-02	8.03E-03	7.75E-06	7.52E-08	1.50E-06	1.18E-06	1.42E+02	5.50E-02	4.32E-01	2.46E+01	9.22E+02
SVOC	Methylphenol (total)	1319-77-3	8.60E+01	5.16E-01	1.77E-05	7.40E-02	6.03E-03	1.00E-05	9.70E-08	2.19E-07	4.49E-07	1.08E+02			2.30E+04	1.42E+04
SVOC	Naphthalene	91-20-3	2.00E+03	1.20E+01	9.90E-03	5.90E-02	4.80E-03	7.50E-06	7.27E-08	2.61E-06	1.55E-06	1.28E+02	8.50E-02	6.02E-01	3.10E+01	3.75E+02
SVOC	Phenanthrene	85-01-8	1.40E+04	8.40E+01	4.76E-04	3.33E-02	2.71E-03	7.47E-06	7.24E-08	1.07E-08	9.94E-08	1.78E+02	1.12E-04	1.10E-03	1.15E+00	9.67E+01
SVOC	Phenol	108-95-2	2.88E+01	1.73E-01	8.15E-06	8.20E-02	6.68E-03	9.10E-06	8.83E-08	3.47E-07	5.65E-07	9.41E+01	2.76E-01	1.44E+00	8.28E+04	2.25E+04
SVOC	Pyrene	129-00-0	1.05E+05	6.30E+02	2.26E-04	2.72E-02	2.21E-03	7.24E-06	7.02E-08	5.99E-10	2.35E-08	2.02E+02	4.59E-06	5.13E-05	1.35E-01	8.51E+01
P/PCB	PCBs (total)	1336-36-3	2.45E+06	1.47E+04	4.09E-02	8.00E-02	6.51E-03	1.00E-05	9.70E-08	1.20E-08	1.05E-07		7.71E-05	1.40E-03	1.20E-02	1.76E+02
INORG	Aluminum	7429-90-5		1.50E+03									2.70E+01			
INORG	Antimony	7440-36-0		4.50E+01									1.22E+02			
INORG	Arsenic	7440-38-2		2.90E+01									7.49E+01			
INORG	Barium	7440-39-3		4.10E+01									1.37E+02			
INORG	Beryllium	7440-41-7		7.90E+02									9.01E+00			
INORG	Cadmium	7440-43-9		7.50E+01									1.12E+02			
INORG	Chromium (total)	7440-47-3		1.90E+01									5.20E+01			
INORG	Cobalt	7440-48-4		4.50E+01									5.89E+01			
INORG	Copper	7440-50-8		3.50E+01									6.35E+01			
INORG	Cyanide (amenable)	57-12-5A		9.90E+00									2.60E+01			
INORG	Cyanide (total)	57-12-5		9.90E+00									2.60E+01			
INORG	Iron	7439-89-6		2.50E+01									5.58E+01			
INORG	Lead	7439-92-1		9.00E+02									2.07E+02			
INORG	Manganese	7439-96-5		6.50E+01									5.49E+01			
INORG	Mercury	7439-97-6		1.00E+03	1.45E-01	3.07E-02	2.50E-03	6.30E-06	6.11E-08	2.40E-07	4.70E-07	2.01E+02	1.96E-03	2.17E-02	5.60E-02	5.60E+01
INORG	Nickel	7440-02-0		6.50E+01									5.87E+01			
INORG	Selenium	7782-49-2		5.00E+00									7.90E+01			
INORG	Silver	7440-22-4		8.30E+00									1.08E+02			
INORG	Thallium	7440-28-0		7.10E+01									2.04E+02			
INORG	Vanadium	7440-62-2		1.00E+03									5.09E+01			
INORG	Zinc	7440-66-6		6.20E+01									6.54E+01			
Notes:		kg/L	ρ_b	1.5E+00												
		kg/L	ρ_s	2.65E+00												
		L/L-soil	n	4.30E-01												
		L/L-soil	θ_w	0.15												
		L/L-soil	θ_a	0.28												
		unitless	f_{oc}	0.006												
Averaging period		year	ED	10												
		s	ED	3.15E+08												
Molar Gas Constant		L-mmHg/mole-°K	R	62.411												
Temperature		°C	T	10												
		°K	T	290												

**Attachment B.13: Air Dispersion Factor 'C/Q' for Inhalation of
Vapors and Particulates
Bedford, Indiana**

Exposure Area (m²)	C/Q (kg/m³ per kg/m²-s)
1800	1.50

**Attachment B.13: Estimated Concentrations in Ambient Air from
Exposed Stream Bank Soil for Trespassers
Bedford, Indiana**

			Vapor			PM ₁₀	
		C/Q (kg/m ³ per kg/m ² -s):		1.50		1.50	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
VOC	Acetone	67-64-1	1.00E+00	1.00E+00	1.04E-05	1.00E+00	3.19E-11
VOC	Benzene	71-43-2	1.00E+00	1.00E+00	4.88E-05	1.00E+00	3.19E-11
VOC	Bromodichloromethane	75-27-4	1.00E+00	1.00E+00	1.59E-05	1.00E+00	3.19E-11
VOC	Bromomethane	74-83-9	1.00E+00	1.00E+00	7.50E-05	1.00E+00	3.19E-11
VOC	2-Butanone	78-93-3	1.00E+00	1.00E+00	9.70E-06	1.00E+00	3.19E-11
VOC	Carbon Disulfide	75-15-0	1.00E+00	1.00E+00	1.22E-04	1.00E+00	3.19E-11
VOC	Chlorobenzene	108-90-7	1.00E+00	1.00E+00	2.09E-05	1.00E+00	3.19E-11
VOC	Chloroethane	75-00-3	1.00E+00	1.00E+00	1.00E-04	1.00E+00	3.19E-11
VOC	Chloroform	67-66-3	1.00E+00	1.00E+00	4.99E-05	1.00E+00	3.19E-11
VOC	Chloromethane	74-87-3	1.00E+00	1.00E+00	1.19E-04	1.00E+00	3.19E-11
VOC	Cumene	98-82-8	1.00E+00	1.00E+00	8.43E-05	1.00E+00	3.19E-11
VOC	Cyclohexane	110-82-7	1.00E+00	1.00E+00	1.03E-04	1.00E+00	3.19E-11
VOC	Dibromochloromethane	124-48-1	1.00E+00	1.00E+00	8.59E-06	1.00E+00	3.19E-11
VOC	1,2-Dichlorobenzene	95-50-1	1.00E+00	1.00E+00	8.91E-06	1.00E+00	3.19E-11
VOC	1,3-Dichlorobenzene	541-73-1	1.00E+00	1.00E+00	5.35E-06	1.00E+00	3.19E-11
VOC	1,4-Dichlorobenzene	106-46-7	1.00E+00	1.00E+00	1.01E-05	1.00E+00	3.19E-11
VOC	Dichlorodifluoromethane	75-71-8	1.00E+00	1.00E+00	1.69E-04	1.00E+00	3.19E-11
VOC	1,1-Dichloroethane	75-34-3	1.00E+00	1.00E+00	5.56E-05	1.00E+00	3.19E-11
VOC	1,2-Dichloroethane	107-06-2	1.00E+00	1.00E+00	3.36E-05	1.00E+00	3.19E-11
VOC	cis-1,2-Dichloroethene	156-59-2	1.00E+00	1.00E+00	4.59E-05	1.00E+00	3.19E-11
VOC	trans-1,2-Dichloroethene	156-60-5	1.00E+00	1.00E+00	5.83E-05	1.00E+00	3.19E-11
VOC	Ethyl Benzene	100-41-4	1.00E+00	1.00E+00	2.43E-05	1.00E+00	3.19E-11
VOC	2-Hexanone	591-78-6	1.00E+00	1.00E+00	5.27E-05	1.00E+00	3.19E-11
VOC	Methyl Acetate	79-20-9	1.00E+00	1.00E+00	2.93E-06	1.00E+00	3.19E-11
VOC	Methyl tert-butyl ether	1634-04-4	1.00E+00	1.00E+00	2.61E-05	1.00E+00	3.19E-11
VOC	4-Methyl-2-pentanone	108-10-1	1.00E+00	1.00E+00	1.06E-05	1.00E+00	3.19E-11
VOC	Methylcyclohexane	108-87-2	1.00E+00	1.00E+00	1.18E-04	1.00E+00	3.19E-11
VOC	Methylene Chloride	75-09-2	1.00E+00	1.00E+00	5.35E-05	1.00E+00	3.19E-11
VOC	Tetrachloroethene	127-18-4	1.00E+00	1.00E+00	5.27E-05	1.00E+00	3.19E-11
VOC	Toluene	108-88-3	1.00E+00	1.00E+00	3.31E-05	1.00E+00	3.19E-11
VOC	1,2,4-Trichlorobenzene	120-82-1	1.00E+00	1.00E+00	3.02E-06	1.00E+00	3.19E-11
VOC	1,1,1-Trichloroethane	71-55-6	1.00E+00	1.00E+00	6.12E-05	1.00E+00	3.19E-11
VOC	Trichloroethene	79-01-6	1.00E+00	1.00E+00	4.06E-05	1.00E+00	3.19E-11
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	1.00E+00	1.00E+00	9.40E-05	1.00E+00	3.19E-11
VOC	Vinyl Chloride	75-01-4	1.00E+00	1.00E+00	1.45E-04	1.00E+00	3.19E-11
VOC	Xylenes (total)	1330-20-7	1.00E+00	1.00E+00	2.22E-05	1.00E+00	3.19E-11
SVOC	Acenaphthene	83-32-9	1.00E+00	1.00E+00	5.96E-07	1.00E+00	3.19E-11
SVOC	Acenaphthylene	208-96-8	1.00E+00	1.00E+00	6.26E-07	1.00E+00	3.19E-11
SVOC	Acetophenone	98-86-2	1.00E+00	1.00E+00	2.45E-06	1.00E+00	3.19E-11
SVOC	Anthracene	120-12-7	1.00E+00	1.00E+00	1.67E-07	1.00E+00	3.19E-11
SVOC	Benzaldehyde	100-52-7	1.00E+00	1.00E+00	3.87E-06	1.00E+00	3.19E-11
SVOC	Benzo(a)anthracene	56-55-3	1.00E+00	1.00E+00	1.47E-08	1.00E+00	3.19E-11
SVOC	Benzo(a)pyrene	50-32-8	1.00E+00	1.00E+00	6.16E-09	1.00E+00	3.19E-11
SVOC	Benzo(b)fluoranthene	205-99-2	1.00E+00	1.00E+00	2.82E-08	1.00E+00	3.19E-11
SVOC	Benzo(g,h,i)perylene	191-24-2	1.00E+00	1.00E+00	2.82E-09	1.00E+00	3.19E-11
SVOC	Benzo(k)fluoranthene	207-08-9	1.00E+00	1.00E+00	3.99E-09	1.00E+00	3.19E-11
SVOC	Biphenyl	92-52-4	1.00E+00	1.00E+00	6.66E-07	1.00E+00	3.19E-11
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.00E+00	1.00E+00	7.95E-10	1.00E+00	3.19E-11
SVOC	Butylbenzylphthalate	85-68-7	1.00E+00	1.00E+00	1.83E-08	1.00E+00	3.19E-11

**Attachment B.13: Estimated Concentrations in Ambient Air from
Exposed Stream Bank Soil for Trespassers
Bedford, Indiana**

			Vapor			PM ₁₀	
	C/IQ (kg/m ³ per kg/m ² -s):		1.50			1.50	
Chem Group	Chemical	CASRN	C _{soil} (mg/kg)	C _{source} (mg/kg)	C _{air} (mg/m ³)	C _{soil} (mg/kg)	C _{air} (mg/m ³)
SVOC	Caprolactam	105-60-2	1.00E+00	1.00E+00	1.10E-06	1.00E+00	3.19E-11
SVOC	Carbazole	86-74-8	1.00E+00	1.00E+00	6.83E-08	1.00E+00	3.19E-11
SVOC	4-Chloroaniline	106-47-8	1.00E+00	1.00E+00	5.89E-07	1.00E+00	3.19E-11
SVOC	Chrysene	218-01-9	1.00E+00	1.00E+00	4.79E-08	1.00E+00	3.19E-11
SVOC	Dibenz(a,h)anthracene	53-70-3	1.00E+00	1.00E+00	1.75E-09	1.00E+00	3.19E-11
SVOC	Dibenzofuran	132-64-9	1.00E+00	1.00E+00	1.13E-07	1.00E+00	3.19E-11
SVOC	Diethylphthalate	84-66-2	1.00E+00	1.00E+00	2.47E-07	1.00E+00	3.19E-11
SVOC	2,4-Dimethylphenol	105-67-9	1.00E+00	1.00E+00	5.34E-07	1.00E+00	3.19E-11
SVOC	Di-n-butylphthalate	84-74-2	1.00E+00	1.00E+00	2.27E-08	1.00E+00	3.19E-11
SVOC	2,6-Dinitrotoluene	606-20-2	1.00E+00	1.00E+00	5.46E-07	1.00E+00	3.19E-11
SVOC	Di-n-octylphthalate	117-84-0	1.00E+00	1.00E+00	2.18E-09	1.00E+00	3.19E-11
SVOC	Fluoranthene	206-44-0	1.00E+00	1.00E+00	4.33E-08	1.00E+00	3.19E-11
SVOC	Fluorene	86-73-7	1.00E+00	1.00E+00	2.56E-07	1.00E+00	3.19E-11
SVOC	Hexachlorobenzene	118-74-1	1.00E+00	1.00E+00	7.07E-07	1.00E+00	3.19E-11
SVOC	Hexachlorobutadiene	87-68-3	1.00E+00	1.00E+00	1.81E-06	1.00E+00	3.19E-11
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.00E+00	4.58E-01	1.21E-09	1.00E+00	3.19E-11
SVOC	2-Methylnaphthalene	91-57-6	1.00E+00	1.00E+00	1.77E-06	1.00E+00	3.19E-11
SVOC	Methylphenol (total)	1319-77-3	1.00E+00	1.00E+00	6.76E-07	1.00E+00	3.19E-11
SVOC	Naphthalene	91-20-3	1.00E+00	1.00E+00	2.33E-06	1.00E+00	3.19E-11
SVOC	Phenanthrene	85-01-8	1.00E+00	1.00E+00	1.50E-07	1.00E+00	3.19E-11
SVOC	Phenol	108-95-2	1.00E+00	1.00E+00	8.51E-07	1.00E+00	3.19E-11
SVOC	Pyrene	129-00-0	1.00E+00	1.00E+00	3.53E-08	1.00E+00	3.19E-11
P/PCB	PCBs (total)	1336-36-3	1.00E+00	1.00E+00	1.58E-07	1.00E+00	3.19E-11
INORG	Aluminum	7429-90-5	1.00E+00			1.00E+00	3.19E-11
INORG	Antimony	7440-36-0	1.00E+00			1.00E+00	3.19E-11
INORG	Arsenic	7440-38-2	1.00E+00			1.00E+00	3.19E-11
INORG	Barium	7440-39-3	1.00E+00			1.00E+00	3.19E-11
INORG	Beryllium	7440-41-7	1.00E+00			1.00E+00	3.19E-11
INORG	Cadmium	7440-43-9	1.00E+00			1.00E+00	3.19E-11
INORG	Chromium (total)	7440-47-3	1.00E+00			1.00E+00	3.19E-11
INORG	Cobalt	7440-48-4	1.00E+00			1.00E+00	3.19E-11
INORG	Copper	7440-50-8	1.00E+00			1.00E+00	3.19E-11
INORG	Cyanide (amenable)	57-12-5A	1.00E+00			1.00E+00	3.19E-11
INORG	Cyanide (total)	57-12-5	1.00E+00			1.00E+00	3.19E-11
INORG	Iron	7439-89-6	1.00E+00			1.00E+00	3.19E-11
INORG	Lead	7439-92-1	1.00E+00			1.00E+00	3.19E-11
INORG	Manganese	7439-96-5	1.00E+00			1.00E+00	3.19E-11
INORG	Mercury	7439-97-6	1.00E+00	1.00E+00	7.07E-07	1.00E+00	3.19E-11
INORG	Nickel	7440-02-0	1.00E+00			1.00E+00	3.19E-11
INORG	Selenium	7782-49-2	1.00E+00			1.00E+00	3.19E-11
INORG	Silver	7440-22-4	1.00E+00			1.00E+00	3.19E-11
INORG	Thallium	7440-28-0	1.00E+00			1.00E+00	3.19E-11
INORG	Vanadium	7440-62-2	1.00E+00			1.00E+00	3.19E-11
INORG	Zinc	7440-66-6	1.00E+00			1.00E+00	3.19E-11
Notes:							
C _{source} = Minimum of Soil Concentration and C _{sat}							

**Attachment B.13: Risk Based Cancer Criteria for Exposure of Trespassers to Stream Bank Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	1.15E-09							1.04E-05			3.19E-11			
VOC	Benzene	71-43-2	A	1.00E+00	1.15E-09	5.5E-02	1.6E+05			5.5E-02		4.88E-05	7.8E-03	2.2E+04	3.19E-11	7.8E-03	3.4E+10	2.0E+04
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	1.15E-09	6.2E-02	1.4E+05			6.2E-02		1.59E-05	1.8E-02	3.0E+04	3.19E-11	1.8E-02	1.5E+10	2.5E+04
VOC	Bromomethane	74-83-9	D	1.00E+00	1.15E-09							7.50E-05			3.19E-11			
VOC	2-Butanone	78-93-3	ID	1.00E+00	1.15E-09							9.70E-06			3.19E-11			
VOC	Carbon Disulfide	75-15-0		1.00E+00	1.15E-09							1.22E-04			3.19E-11			
VOC	Chlorobenzene	108-90-7	D	1.00E+00	1.15E-09							2.09E-05			3.19E-11			
VOC	Chloroethane	75-00-3		1.00E+00	1.15E-09	2.9E-03	3.0E+06			2.9E-03		1.00E-04			3.19E-11			3.0E+06
VOC	Chloroform	67-66-3	B2	1.00E+00	1.15E-09							4.99E-05	2.3E-02	7.4E+03	3.19E-11	2.3E-02	1.2E+10	7.4E+03
VOC	Chloromethane	74-87-3	D	1.00E+00	1.15E-09							1.19E-04			3.19E-11			
VOC	Cumene	98-82-8	D	1.00E+00	1.15E-09							8.43E-05			3.19E-11			
VOC	Cyclohexane	110-82-7	ID	1.00E+00	1.15E-09							1.03E-04			3.19E-11			
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	1.15E-09	8.4E-02	1.0E+05			8.4E-02		8.59E-06	2.4E-02	4.1E+04	3.19E-11	2.4E-02	1.1E+10	3.0E+04
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	1.15E-09							8.91E-06			3.19E-11			
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	1.15E-09							5.35E-06			3.19E-11			
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	1.15E-09	2.4E-02	3.6E+05			2.4E-02		1.01E-05	6.3E-03	1.3E+05	3.19E-11	6.3E-03	4.2E+10	9.8E+04
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	1.15E-09							1.69E-04			3.19E-11			
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	1.15E-09							5.56E-05			3.19E-11			
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	1.15E-09	9.1E-02	9.5E+04			9.1E-02		3.36E-05	2.6E-02	9.7E+03	3.19E-11	2.6E-02	1.0E+10	8.8E+03
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	1.15E-09							4.59E-05			3.19E-11			
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	1.15E-09							5.83E-05			3.19E-11			
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	1.15E-09							2.43E-05			3.19E-11			
VOC	2-Hexanone	591-78-6		1.00E+00	1.15E-09							5.27E-05			3.19E-11			
VOC	Methyl Acetate	79-20-9		1.00E+00	1.15E-09							2.93E-06			3.19E-11			
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	1.15E-09	3.3E-03	2.6E+06			3.3E-03		2.61E-05	1.0E-04	3.3E+06	3.19E-11	1.0E-04	2.7E+12	1.5E+06
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	1.15E-09							1.06E-05			3.19E-11			
VOC	Methylcyclohexane	108-87-2		1.00E+00	1.15E-09							1.18E-04			3.19E-11			
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	1.15E-09	7.5E-03	1.2E+06			7.5E-03		5.35E-05	4.7E-04	3.4E+05	3.19E-11	4.7E-04	5.7E+11	2.6E+05
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	1.15E-09	5.2E-02	1.7E+05			5.2E-02		5.27E-05	3.1E-03	5.3E+04	3.19E-11	3.1E-03	8.7E+10	4.0E+04
VOC	Toluene	108-88-3	D	1.00E+00	1.15E-09							3.31E-05			3.19E-11			
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	1.15E-09							3.02E-06			3.19E-11			
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	1.15E-09							6.12E-05			3.19E-11			
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	1.15E-09	1.1E-02	7.9E+05			1.1E-02		4.06E-05	1.7E-03	1.2E+05	3.19E-11	1.7E-03	1.6E+11	1.1E+05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	1.15E-09							9.40E-05			3.19E-11			
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	1.15E-09	1.4E+00	6.2E+03			1.4E+00		1.45E-04	8.8E-03	6.7E+03	3.19E-11	8.8E-03	3.0E+10	3.2E+03
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	1.15E-09							2.22E-05			3.19E-11			
SVOC	Acenaphthene	83-32-9		1.00E+00	1.15E-09			1.30E-01	4.14E-10			5.96E-07			3.19E-11			
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			6.26E-07			3.19E-11			
SVOC	Acetophenone	98-86-2	D	1.00E+00	1.15E-09			1.00E-01	3.18E-10			2.45E-06			3.19E-11			
SVOC	Anthracene	120-12-7	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			1.67E-07			3.19E-11			
SVOC	Benzaldehyde	100-52-7		1.00E+00	1.15E-09			1.00E-01	3.18E-10			3.87E-06			3.19E-11			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	1.15E-09	7.3E-01	1.2E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	1.47E-08	2.1E-01	2.8E+06	3.19E-11	2.1E-01	1.3E+09	8.7E+03
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	1.15E-09	7.3E+00	1.2E+03	1.30E-01	4.14E-10	7.3E+00	3.3E+03	6.16E-09	8.9E-01	1.6E+06	3.19E-11	8.9E-01	3.0E+08	8.7E+02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	1.15E-09	7.3E-01	1.2E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	2.82E-08	2.1E-01	1.5E+06	3.19E-11	2.1E-01	1.3E+09	8.7E+03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			2.82E-09			3.19E-11			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	1.15E-09	7.3E-02	1.2E+05	1.30E-01	4.14E-10	7.3E-02	3.3E+05	3.99E-09	2.1E-02	1.0E+08	3.19E-11	2.1E-02	1.3E+10	8.7E+04
SVOC	Biphenyl	92-52-4	D	1.00E+00	1.15E-09			1.00E-01	3.18E-10			6.66E-07			3.19E-11			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	1.15E-09	1.4E-02	6.2E+05	1.00E-01	3.18E-10	1.4E-02	2.2E+06	7.95E-10	4.0E-03	2.7E+09	3.19E-11	4.0E-03	6.7E+10	4.9E+05
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	1.15E-09			1.00E-01	3.18E-10			1.83E-08			3.19E-11			
SVOC	Caprolactam	105-60-2		1.00E+00	1.15E-09			1.00E-01	3.18E-10			1.10E-06			3.19E-11			
SVOC	Carbazole	86-74-8	B2	1.00E+00	1.15E-09	2.0E-02	4.3E+05	1.00E-01	3.18E-10	2.0E-02	1.6E+06	6.83E-08	5.7E-03	2.2E+07	3.19E-11	5.7E-03	4.7E+10	3.4E+05

**Attachment B.13: Risk Based Cancer Criteria for Exposure of Trespassers to Stream Bank Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	C _{air} (mg/m ³)	URF (m ³ /mg)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	1.15E-09			1.00E-01	3.18E-10			5.89E-07			3.19E-11			
SVOC	Chrysene	218-01-9	B2	1.00E+00	1.15E-09	7.3E-03	1.2E+06	1.30E-01	4.14E-10	7.3E-03	3.3E+06	4.79E-08	2.1E-03	8.5E+07	3.19E-11	2.1E-03	1.3E+11	8.7E+05
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	1.15E-09	7.3E+00	1.2E+03	1.30E-01	4.14E-10	7.3E+00	3.3E+03	1.75E-09	2.1E+00	2.3E+06	3.19E-11	2.1E+00	1.3E+08	8.8E+02
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	1.15E-09			1.00E-01	3.18E-10			1.13E-07			3.19E-11			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	1.15E-09			1.00E-01	3.18E-10			2.47E-07			3.19E-11			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	1.15E-09			1.00E-01	3.18E-10			5.34E-07			3.19E-11			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	1.15E-09			1.00E-01	3.18E-10			2.27E-08			3.19E-11			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	1.15E-09	6.8E-01	1.3E+04	1.00E-01	3.18E-10	6.8E-01	4.6E+04	5.46E-07	1.9E-01	8.0E+04	3.19E-11	1.9E-01	1.4E+09	8.9E+03
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	1.15E-09			1.00E-01	3.18E-10			2.18E-09			3.19E-11			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			4.33E-08			3.19E-11			
SVOC	Fluorene	86-73-7	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			2.56E-07			3.19E-11			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	1.15E-09	1.6E+00	5.4E+03	1.00E-01	3.18E-10	1.6E+00	2.0E+04	7.07E-07	4.6E-01	2.6E+04	3.19E-11	4.6E-01	5.8E+08	3.7E+03
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	1.15E-09	7.8E-02	1.1E+05	1.00E-01	3.18E-10	7.8E-02	4.0E+05	1.81E-06	2.2E-02	2.1E+05	3.19E-11	2.2E-02	1.2E+10	6.2E+04
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	1.15E-09	7.3E-01	1.2E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	1.21E-09	2.1E-01	3.4E+07	3.19E-11	2.1E-01	1.3E+09	8.8E+03
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	1.15E-09			1.00E-01	3.18E-10			1.77E-06			3.19E-11			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	1.15E-09			1.00E-01	3.18E-10			6.76E-07			3.19E-11			
SVOC	Naphthalene	91-20-3	C	1.00E+00	1.15E-09			1.30E-01	4.14E-10			2.33E-06			3.19E-11			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			1.50E-07			3.19E-11			
SVOC	Phenol	108-95-2	ID	1.00E+00	1.15E-09			1.00E-01	3.18E-10			8.51E-07			3.19E-11			
SVOC	Pyrene	129-00-0	D	1.00E+00	1.15E-09			1.30E-01	4.14E-10			3.53E-08			3.19E-11			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	1.15E-09	2.0E+00	4.3E+03	1.40E-01	4.46E-10	2.0E+00	1.1E+04	1.58E-07	5.7E-01	9.4E+04	3.19E-11	5.7E-01	4.7E+08	3.0E+03
INORG	Aluminum	7429-90-5	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Antimony	7440-36-0		1.00E+00	1.15E-09										3.19E-11			
INORG	Arsenic	7440-38-2	A	1.00E+00	1.15E-09	1.5E+00	5.8E+03	3.00E-02	9.55E-11	1.5E+00	7.0E+04		4.3E+00		3.19E-11	4.3E+00	6.2E+07	5.3E+03
INORG	Barium	7440-39-3	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Beryllium	7440-41-7	B1	1.00E+00	1.15E-09								2.4E+00		3.19E-11	2.4E+00	1.1E+08	1.1E+08
INORG	Cadmium	7440-43-9	B1	1.00E+00	1.15E-09			1.00E-03	3.18E-12				1.8E+00		3.19E-11	1.8E+00	1.5E+08	1.5E+08
INORG	Chromium (total)	7440-47-3		1.00E+00	1.15E-09								1.2E+01		3.19E-11	1.2E+01	2.2E+07	2.2E+07
INORG	Cobalt	7440-48-4	B1	1.00E+00	1.15E-09								2.8E+00		3.19E-11	2.8E+00	9.5E+07	9.5E+07
INORG	Copper	7440-50-8	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Cyanide (total)	57-12-5	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Iron	7439-89-6	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Lead	7439-92-1	B2	1.00E+00	1.15E-09										3.19E-11			
INORG	Manganese	7439-96-5	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Mercury	7439-97-6	D	1.00E+00	1.15E-09							7.07E-07			3.19E-11			
INORG	Nickel	7440-02-0	A	1.00E+00	1.15E-09								2.4E-01		3.19E-11	2.4E-01	1.1E+09	1.1E+09
INORG	Selenium	7782-49-2	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Silver	7440-22-4	D	1.00E+00	1.15E-09										3.19E-11			
INORG	Thallium	7440-28-0		1.00E+00	1.15E-09										3.19E-11			
INORG	Vanadium	7440-62-2		1.00E+00	1.15E-09										3.19E-11			
INORG	Zinc	7440-66-6	D	1.00E+00	1.15E-09										3.19E-11			

**Attachment B.13: Risk Based Noncancer Criteria for Exposure of Trespassers to Stream Bank Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	8.06E-09	9.0E-01	1.12E+08			9.0E-01		1.04E-05	3.2E+00	3.67E+07	3.19E-11	3.15E+00	1.20E+13	2.76E+07
VOC	Benzene	71-43-2	A	1.00E+00	8.06E-09	4.0E-03	4.96E+05			4.0E-03		4.88E-05	3.0E-02	7.49E+04	3.19E-11	3.00E-02	1.14E+11	6.50E+04
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02		1.59E-05	7.0E-02	5.36E+05	3.19E-11	7.00E-02	2.67E+11	4.41E+05
VOC	Bromomethane	74-83-9	D	1.00E+00	8.06E-09	1.4E-03	1.74E+05			1.4E-03		7.50E-05	5.0E-03	8.12E+03	3.19E-11	5.00E-03	1.91E+10	7.75E+03
VOC	2-Butanone	78-93-3	ID	1.00E+00	8.06E-09	6.0E-01	7.45E+07			6.0E-01		9.70E-06	5.0E+00	6.27E+07	3.19E-11	5.00E+00	1.91E+13	3.40E+07
VOC	Carbon Disulfide	75-15-0		1.00E+00	8.06E-09	1.0E-01	1.24E+07			1.0E-01		1.22E-04	7.0E-01	7.00E+05	3.19E-11	7.00E-01	2.67E+12	6.63E+05
VOC	Chlorobenzene	108-90-7	D	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02		2.09E-05	6.0E-02	3.49E+05	3.19E-11	6.00E-02	2.29E+11	3.06E+05
VOC	Chloroethane	75-00-3		1.00E+00	8.06E-09	4.0E-01	4.96E+07			4.0E-01		1.00E-04	1.0E+01	1.22E+07	3.19E-11	1.00E+01	3.81E+13	9.77E+06
VOC	Chloroform	67-66-3	B2	1.00E+00	8.06E-09	1.0E-02	1.24E+06			1.0E-02		4.99E-05	5.0E-02	1.22E+05	3.19E-11	5.00E-02	1.91E+11	1.11E+05
VOC	Chloromethane	74-87-3	D	1.00E+00	8.06E-09							1.19E-04	9.0E-02	9.20E+04	3.19E-11	9.00E-02	3.43E+11	9.20E+04
VOC	Cumene	98-82-8	D	1.00E+00	8.06E-09	1.0E-01	1.24E+07			1.0E-01		8.43E-05	4.0E-01	5.77E+05	3.19E-11	4.00E-01	1.52E+12	5.52E+05
VOC	Cyclohexane	110-82-7	ID	1.00E+00	8.06E-09							1.03E-04	6.0E+00	7.10E+06	3.19E-11	6.00E+00	2.29E+13	7.10E+06
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02		8.59E-06	7.0E-02	9.91E+05	3.19E-11	7.00E-02	2.67E+11	7.08E+05
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	8.06E-09	9.0E-02	1.12E+07			9.0E-02		8.91E-06	2.0E-01	2.73E+06	3.19E-11	2.00E-01	7.62E+11	2.20E+06
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	8.06E-09	9.0E-04	1.12E+05			9.0E-04		5.35E-06	1.4E-01	3.19E+06	3.19E-11	1.40E-01	5.34E+11	1.08E+05
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	8.06E-09	3.0E-02	3.72E+06			3.0E-02		1.01E-05	8.0E-01	9.67E+06	3.19E-11	8.00E-01	3.05E+12	2.69E+06
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	8.06E-09	2.0E-01	2.48E+07			2.0E-01		1.69E-04	2.0E-01	1.44E+05	3.19E-11	2.00E-01	7.62E+11	1.43E+05
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	8.06E-09	1.0E-01	1.24E+07			1.0E-01		5.56E-05	5.0E-01	1.09E+06	3.19E-11	5.00E-01	1.91E+12	1.01E+06
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	8.06E-09	3.0E-02	3.72E+06			3.0E-02		3.36E-05	5.0E-03	1.81E+04	3.19E-11	5.00E-03	1.91E+10	1.80E+04
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	8.06E-09	1.0E-02	1.24E+06			1.0E-02		4.59E-05	3.5E-02	9.28E+04	3.19E-11	3.50E-02	1.33E+11	8.63E+04
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02		5.83E-05	7.0E-02	1.46E+05	3.19E-11	7.00E-02	2.67E+11	1.38E+05
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	8.06E-09	1.0E-01	1.24E+07			1.0E-01		2.43E-05	1.0E+00	5.01E+06	3.19E-11	1.00E+00	3.81E+12	3.57E+06
VOC	2-Hexanone	591-78-6		1.00E+00	8.06E-09	4.0E-02	4.96E+06			4.0E-02		5.27E-05	5.0E-03	1.15E+04	3.19E-11	5.00E-03	1.91E+10	1.15E+04
VOC	Methyl Acetate	79-20-9		1.00E+00	8.06E-09	1.0E+00	1.24E+08			1.0E+00		2.93E-06	3.5E+00	1.45E+08	3.19E-11	3.50E+00	1.33E+13	6.69E+07
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	8.06E-09							2.61E-05	3.0E+00	1.40E+07	3.19E-11	3.00E+00	1.14E+13	1.40E+07
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	8.06E-09							1.06E-05	3.0E+00	3.45E+07	3.19E-11	3.00E+00	1.14E+13	3.45E+07
VOC	Methylcyclohexane	108-87-2		1.00E+00	8.06E-09							1.18E-04	3.0E+00	3.08E+06	3.19E-11	3.00E+00	1.14E+13	3.08E+06
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	8.06E-09	6.0E-02	7.45E+06			6.0E-02		5.35E-05	3.0E+00	6.82E+06	3.19E-11	3.00E+00	1.14E+13	3.56E+06
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	8.06E-09	1.0E-02	1.24E+06			1.0E-02		5.27E-05	4.0E-01	9.24E+05	3.19E-11	4.00E-01	1.52E+12	5.30E+05
VOC	Toluene	108-88-3	D	1.00E+00	8.06E-09	2.0E-01	2.48E+07			2.0E-01		3.31E-05	4.0E-01	1.47E+06	3.19E-11	4.00E-01	1.52E+12	1.39E+06
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	8.06E-09	1.0E-02	1.24E+06			1.0E-02		3.02E-06	2.0E-01	8.06E+06	3.19E-11	2.00E-01	7.62E+11	1.08E+06
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	8.06E-09	2.8E-01	3.47E+07			2.8E-01		6.12E-05	2.2E+00	4.38E+06	3.19E-11	2.20E+00	8.38E+12	3.89E+06
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	8.06E-09	6.0E-03	7.45E+05			6.0E-03		4.06E-05			3.19E-11			7.45E+05
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	8.06E-09	3.0E+01	3.72E+09			3.0E+01		9.40E-05	3.0E+01	3.88E+07	3.19E-11	3.00E+01	1.14E+14	3.84E+07
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	8.06E-09	3.0E-03	3.72E+05			3.0E-03		1.45E-04	1.0E-01	8.40E+04	3.19E-11	1.00E-01	3.81E+11	6.86E+04
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	8.06E-09	2.0E-01	2.48E+07			2.0E-01		2.22E-05	1.0E-01	5.47E+05	3.19E-11	1.00E-01	3.81E+11	5.35E+05
SVOC	Acenaphthene	83-32-9		1.00E+00	8.06E-09	6.0E-02	7.45E+06	1.30E-01	2.90E-09	6.0E-02	2.07E+07	5.96E-07	2.1E-01	4.28E+07	3.19E-11	2.10E-01	8.00E+11	4.86E+06
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	8.06E-09	3.0E-02	3.72E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	6.26E-07	1.1E-01	2.04E+07	3.19E-11	1.05E-01	4.00E+11	2.41E+06
SVOC	Acetophenone	98-86-2	D	1.00E+00	8.06E-09	1.0E-01	1.24E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	2.45E-06	3.5E-01	1.74E+07	3.19E-11	3.50E-01	1.33E+12	6.23E+06
SVOC	Anthracene	120-12-7	D	1.00E+00	8.06E-09	3.0E-01	3.72E+07	1.30E-01	2.90E-09	3.0E-01	1.04E+08	1.67E-07			3.19E-11			2.74E+07
SVOC	Benzaldehyde	100-52-7		1.00E+00	8.06E-09	1.0E-01	1.24E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	3.87E-06	3.5E-01	1.10E+07	3.19E-11	3.50E-01	1.33E+12	5.16E+06
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			1.47E-08			3.19E-11			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			6.16E-09			3.19E-11			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			2.82E-08			3.19E-11			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	8.06E-09	3.0E-02	3.72E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	2.82E-09	1.1E-01	4.54E+09	3.19E-11	1.05E-01	4.00E+11	2.74E+06
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			3.99E-09			3.19E-11			
SVOC	Biphenyl	92-52-4	D	1.00E+00	8.06E-09	5.0E-02	6.21E+06	1.00E-01	2.23E-09	5.0E-02	2.24E+07	6.66E-07	1.8E-01	3.20E+07	3.19E-11	1.75E-01	6.67E+11	4.22E+06
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	8.06E-09	2.0E-02	2.48E+06	1.00E-01	2.23E-09	2.0E-02	8.98E+06	7.95E-10			3.19E-11			1.94E+06
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	8.06E-09	2.0E-01	2.48E+07	1.00E-01	2.23E-09	2.0E-01	8.98E+07	1.83E-08	7.0E-01	4.66E+09	3.19E-11	7.00E-01	2.67E+12	1.94E+07
SVOC	Caprolactam	105-60-2		1.00E+00	8.06E-09	5.0E-01	6.21E+07	1.00E-01	2.23E-09	5.0E-01	2.24E+08	1.10E-06	1.8E+00	1.94E+08	3.19E-11	1.75E+00	6.67E+12	3.89E+07
SVOC	Carbazole	86-74-8	B2	1.00E+00	8.06E-09			1.00E-01	2.23E-09			6.83E-08			3.19E-11			

**Attachment B.13: Risk Based Noncancer Criteria for Exposure of Trespassers to Stream Bank Soil
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Soil Ingestion				Soil Dermal Contact				Soil Vapor Inhalation			Soil Particulate Inhalation			Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	C _{air} (mg/m ³)	RfC (mg/m ³)	RBC (mg/kg)	
SVOC	4-Chloroaniline	106-47-8		1.00E+00	8.06E-09	4.0E-03	4.96E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	5.89E-07	1.4E-02	2.89E+06	3.19E-11	1.40E-02	5.34E+10	3.43E+05
SVOC	Chrysene	218-01-9	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			4.79E-08			3.19E-11			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			1.75E-09			3.19E-11			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	8.06E-09	4.0E-03	4.96E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	1.13E-07	1.4E-02	1.51E+07	3.19E-11	1.40E-02	5.34E+10	3.79E+05
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	8.06E-09	8.0E-01	9.93E+07	1.00E-01	2.23E-09	8.0E-01	3.59E+08	2.47E-07	2.8E+00	1.38E+09	3.19E-11	2.80E+00	1.07E+13	7.36E+07
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	8.06E-09	2.0E-02	2.48E+06	1.00E-01	2.23E-09	2.0E-02	8.98E+06	5.34E-07	7.0E-02	1.60E+07	3.19E-11	7.00E-02	2.67E+11	1.73E+06
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	8.06E-09	1.0E-01	1.24E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	2.27E-08			3.19E-11			9.72E+06
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	8.06E-09	1.0E-03	1.24E+05	1.00E-01	2.23E-09	1.0E-03	4.49E+05	5.46E-07	3.5E-03	7.80E+05	3.19E-11	3.50E-03	1.33E+10	8.64E+04
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	8.06E-09	4.0E-02	4.96E+06	1.00E-01	2.23E-09	4.0E-02	1.80E+07	2.18E-09			3.19E-11			3.89E+06
SVOC	Fluoranthene	206-44-0	D	1.00E+00	8.06E-09	4.0E-02	4.96E+06	1.30E-01	2.90E-09	4.0E-02	1.38E+07	4.33E-08	1.4E-01	3.93E+08	3.19E-11	1.40E-01	5.34E+11	3.62E+06
SVOC	Fluorene	86-73-7	D	1.00E+00	8.06E-09	4.0E-02	4.96E+06	1.30E-01	2.90E-09	4.0E-02	1.38E+07	2.56E-07	1.4E-01	6.66E+07	3.19E-11	1.40E-01	5.34E+11	3.46E+06
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	8.06E-09	8.0E-04	9.93E+04	1.00E-01	2.23E-09	8.0E-04	3.59E+05	7.07E-07			3.19E-11			7.78E+04
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	8.06E-09	3.0E-04	3.72E+04	1.00E-01	2.23E-09	3.0E-04	1.35E+05	1.81E-06			3.19E-11			2.92E+04
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	8.06E-09			1.30E-01	2.90E-09			1.21E-09			3.19E-11			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	8.06E-09	4.0E-03	4.96E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	1.77E-06	3.0E-03	2.06E+05	3.19E-11	3.00E-03	1.14E+10	1.35E+05
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	8.06E-09	5.0E-02	6.21E+06	1.00E-01	2.23E-09	5.0E-02	2.24E+07	6.76E-07	1.8E-01	3.15E+07	3.19E-11	1.75E-01	6.67E+11	4.21E+06
SVOC	Naphthalene	91-20-3	C	1.00E+00	8.06E-09	2.0E-02	2.48E+06	1.30E-01	2.90E-09	2.0E-02	6.90E+06	2.33E-06	3.0E-03	1.57E+05	3.19E-11	3.00E-03	1.14E+10	1.44E+05
SVOC	Phenanthrene	85-01-8	D	1.00E+00	8.06E-09	3.0E-02	3.72E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	1.50E-07	1.1E-01	8.54E+07	3.19E-11	1.05E-01	4.00E+11	2.65E+06
SVOC	Phenol	108-95-2	ID	1.00E+00	8.06E-09	3.0E-01	3.72E+07	1.00E-01	2.23E-09	3.0E-01	1.35E+08	8.51E-07			3.19E-11			2.92E+07
SVOC	Pyrene	129-00-0	D	1.00E+00	8.06E-09	3.0E-02	3.72E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	3.53E-08	1.1E-01	3.62E+08	3.19E-11	1.05E-01	4.00E+11	2.72E+06
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	8.06E-09	2.0E-05	2.48E+03	1.40E-01	3.12E-09	2.0E-05	6.41E+03	1.58E-07			3.19E-11			1.79E+03
INORG	Aluminum	7429-90-5	D	1.00E+00	8.06E-09	1.0E+00	1.24E+08			1.0E+00			5.0E-03		3.19E-11	5.00E-03	1.91E+10	1.23E+08
INORG	Antimony	7440-36-0		1.00E+00	8.06E-09	4.0E-04	4.96E+04			6.0E-05			1.4E-03		3.19E-11	1.40E-03	5.34E+09	4.96E+04
INORG	Arsenic	7440-38-2	A	1.00E+00	8.06E-09	3.0E-04	3.72E+04	3.00E-02	6.68E-10	3.0E-04	4.49E+05				3.19E-11			3.44E+04
INORG	Barium	7440-39-3	D	1.00E+00	8.06E-09	7.0E-02	8.69E+06			7.0E-02					3.19E-11			8.69E+06
INORG	Beryllium	7440-41-7	B1	1.00E+00	8.06E-09	2.0E-03	2.48E+05			1.4E-05			2.0E-05		3.19E-11	2.00E-05	7.62E+07	2.47E+05
INORG	Cadmium	7440-43-9	B1	1.00E+00	8.06E-09	1.0E-03	1.24E+05	1.00E-03	2.23E-11	2.5E-05	1.12E+06		2.0E-04		3.19E-11	2.00E-04	7.60E+08	1.12E+05
INORG	Chromium (total)	7440-47-3		1.00E+00	8.06E-09	3.0E-03	3.72E+05			7.5E-05					3.19E-11			3.72E+05
INORG	Cobalt	7440-48-4	B1	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02			2.0E-05		3.19E-11	2.00E-05	7.62E+07	2.40E+06
INORG	Copper	7440-50-8	D	1.00E+00	8.06E-09	4.0E-02	4.96E+06			4.0E-02			1.4E-01		3.19E-11	1.40E-01	5.34E+11	4.96E+06
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02			7.0E-02		3.19E-11	7.00E-02	2.67E+11	2.48E+06
INORG	Cyanide (total)	57-12-5	D	1.00E+00	8.06E-09	2.0E-02	2.48E+06			2.0E-02			7.0E-02		3.19E-11	7.00E-02	2.67E+11	2.48E+06
INORG	Iron	7439-89-6	D	1.00E+00	8.06E-09	3.0E-01	3.72E+07			3.0E-01					3.19E-11			3.72E+07
INORG	Lead	7439-92-1	B2	1.00E+00	8.06E-09										3.19E-11			
INORG	Manganese	7439-96-5	D	1.00E+00	8.06E-09	1.4E-01	1.74E+07			5.6E-03			5.0E-05		3.19E-11	5.00E-05	1.91E+08	1.59E+07
INORG	Mercury	7439-97-6	D	1.00E+00	8.06E-09	3.0E-04	3.72E+04			2.1E-05		7.07E-07	3.0E-04	5.16E+04	3.19E-11	3.00E-04	1.14E+09	2.16E+04
INORG	Nickel	7440-02-0	A	1.00E+00	8.06E-09	2.0E-02	2.48E+06			8.0E-04					3.19E-11			2.48E+06
INORG	Selenium	7782-49-2	D	1.00E+00	8.06E-09	5.0E-03	6.21E+05			5.0E-03			1.8E-02		3.19E-11	1.75E-02	6.67E+10	6.20E+05
INORG	Silver	7440-22-4	D	1.00E+00	8.06E-09	5.0E-03	6.21E+05			2.0E-04			1.0E-05		3.19E-11	1.00E-05	3.81E+07	6.11E+05
INORG	Thallium	7440-28-0		1.00E+00	8.06E-09	7.0E-05	8.69E+03			7.0E-05			2.5E-04		3.19E-11	2.45E-04	9.34E+08	8.69E+03
INORG	Vanadium	7440-62-2		1.00E+00	8.06E-09	7.0E-03	8.69E+05			1.8E-04			2.5E-02		3.19E-11	2.45E-02	9.34E+10	8.69E+05
INORG	Zinc	7440-66-6	D	1.00E+00	8.06E-09	3.0E-01	3.72E+07			3.0E-01			1.1E+00		3.19E-11	1.05E+00	4.00E+12	3.72E+07

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Exposure of Trespassers to Stream Sediment

**Attachment B.14: Bounding Estimates of Risk and HQ for Trespasser Exposure to Stream Sediment
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Sediment Conc (mg/kg)	Sediment Background Conc (mg/kg)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
WS10-12	SVOC	Methylphenol (total)	1319-77-3		9	1	1.50E-01			8.0E+06		1.9E-08
WS10-12	SVOC	Phenanthrene	85-01-8	D	9	2	5.30E-01			4.3E+06		1.2E-07
WS10-12	SVOC	Pyrene	129-00-0	D	9	2	7.00E-01			4.3E+06		1.6E-07
WS10-12	VOC	Acetone	67-64-1	ID	9	6	6.00E-02			2.2E+08		2.7E-10
WS10-12	VOC	2-Butanone	78-93-3	ID	9	4	6.80E-03			1.5E+08		4.6E-11
WS10-12	VOC	Methyl Acetate	79-20-9		9	4	4.60E-02			2.5E+08		1.9E-10
WS10-12	SVOC	Anthracene	120-12-7	D	9	2	1.00E-01			4.3E+07		2.3E-09
WS10-12	SVOC	Benzo(a)anthracene	56-55-3	B2	9	2	7.00E-01		1.4E+04		5.1E-10	
WS10-12	SVOC	Benzo(a)pyrene	50-32-8	B2	9	2	8.30E-01		1.4E+03		6.0E-09	
WS10-12	SVOC	Benzo(b)fluoranthene	205-99-2	B2	9	2	7.50E-01		1.4E+04		5.4E-10	
WS10-12	SVOC	Benzo(g,h,i)perylene	191-24-2	D	9	2	4.70E-01			4.3E+06		1.1E-07
WS10-12	SVOC	Benzo(k)fluoranthene	207-08-9	B2	9	2	3.80E-01		1.4E+05		2.7E-11	
WS10-12	SVOC	Chrysene	218-01-9	B2	9	2	7.40E-01		1.4E+06		5.3E-12	
WS10-12	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	9	1	1.50E-01		1.4E+03		1.1E-09	
WS10-12	SVOC	Fluoranthene	206-44-0	D	9	2	8.40E-01			5.8E+06		1.5E-07
WS10-12	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	9	1	4.40E-01		1.4E+04		3.2E-10	
WS10-12	P/PCB	PCBs (total)	1336-36-3	B2	11	11	2.14E+01		4.9E+03	2.8E+03	4.4E-08	7.7E-03
WS10-12	INORG	Aluminum	7429-90-5	D	9	9	1.23E+04	3.32E+04		2.5E+08		5.0E-05
WS10-12	INORG	Arsenic	7440-38-2	A	9	9	1.49E+01	2.12E+01	9.9E+03	6.4E+04	1.5E-08	2.3E-04
WS10-12	INORG	Barium	7440-39-3	D	9	9	1.42E+02	2.50E+02		1.7E+07		8.2E-06
WS10-12	INORG	Beryllium	7440-41-7	B1	9	9	1.30E+00			5.0E+05		2.6E-06
WS10-12	INORG	Cadmium	7440-43-9	B1	9	9	7.60E-01			2.0E+05		3.7E-06
WS10-12	INORG	Chromium (total)	7440-47-3		9	9	4.05E+01	9.80E+01		7.4E+05		5.4E-05
WS10-12	INORG	Cobalt	7440-48-4	B1	9	9	1.79E+01			5.0E+06		3.6E-06
WS10-12	INORG	Copper	7440-50-8	D	9	9	2.13E+01	6.20E+01		9.9E+06		2.1E-06
WS10-12	INORG	Iron	7439-89-6	D	9	9	2.88E+04	4.90E+04		7.4E+07		3.9E-04
WS10-12	INORG	Lead	7439-92-1	B2	9	9	9.10E+01	1.16E+02				
WS10-12	INORG	Manganese	7439-96-5	D	9	9	1.44E+03	1.64E+03		3.5E+07		4.1E-05
WS10-12	INORG	Mercury	7439-97-6	D	9	6	2.50E-01	2.28E-01		7.4E+04		3.4E-06
WS10-12	INORG	Nickel	7440-02-0	A	9	9	2.09E+01	7.00E+01		5.0E+06		4.2E-06
WS10-12	INORG	Selenium	7782-49-2	D	9	5	6.60E-01			1.2E+06		5.3E-07
WS10-12	INORG	Silver	7440-22-4	D	9	3	4.50E-01			1.2E+06		3.6E-07
WS10-12	INORG	Vanadium	7440-62-2		9	9	4.09E+01	5.80E+01		1.7E+06		2.4E-05
WS10-12	INORG	Zinc	7440-66-6	D	9	9	8.38E+01	3.30E+02		7.4E+07		1.1E-06
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												
4. Ratios are calculated without subtracting site-specific sediment background concentrations for inorganics.												
5. WS10-12 represents the area within a half mile of warning signs (WS) 10 to 12 and 30 feet from the stream, including the area between the northern and southern branches.												

**Attachment B.14: Air Dispersion Factor 'C/Q' for Inhalation of
Vapors and Particulates
Bedford, Indiana**

Exposure Area (m²)	C/Q (kg/m³ per kg/m²-s)
1800	1.50

**Attachment B.14: Cancer Risk Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{sed} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	5.76E-10							
VOC	Benzene	71-43-2	A	1.00E+00	5.76E-10	5.5E-02	3.2E+05			5.5E-02		3.2E+05
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	5.76E-10	6.2E-02	2.8E+05			6.2E-02		2.8E+05
VOC	Bromomethane	74-83-9	D	1.00E+00	5.76E-10							
VOC	2-Butanone	78-93-3	ID	1.00E+00	5.76E-10							
VOC	Carbon Disulfide	75-15-0		1.00E+00	5.76E-10							
VOC	Chlorobenzene	108-90-7	D	1.00E+00	5.76E-10							
VOC	Chloroethane	75-00-3		1.00E+00	5.76E-10	2.9E-03	6.0E+06			2.9E-03		6.0E+06
VOC	Chloroform	67-66-3	B2	1.00E+00	5.76E-10							
VOC	Chloromethane	74-87-3	D	1.00E+00	5.76E-10							
VOC	Cumene	98-82-8	D	1.00E+00	5.76E-10							
VOC	Cyclohexane	110-82-7	ID	1.00E+00	5.76E-10							
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	5.76E-10	8.4E-02	2.1E+05			8.4E-02		2.1E+05
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	5.76E-10							
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	5.76E-10							
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	5.76E-10	2.4E-02	7.2E+05			2.4E-02		7.2E+05
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	5.76E-10							
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	5.76E-10							
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	5.76E-10	9.1E-02	1.9E+05			9.1E-02		1.9E+05
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	5.76E-10							
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	5.76E-10							
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	5.76E-10							
VOC	2-Hexanone	591-78-6		1.00E+00	5.76E-10							
VOC	Methyl Acetate	79-20-9		1.00E+00	5.76E-10							
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	5.76E-10	3.3E-03	5.3E+06			3.3E-03		5.3E+06
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	5.76E-10							
VOC	Methylcyclohexane	108-87-2		1.00E+00	5.76E-10							
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	5.76E-10	7.5E-03	2.3E+06			7.5E-03		2.3E+06
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	5.76E-10	5.2E-02	3.3E+05			5.2E-02		3.3E+05
VOC	Toluene	108-88-3	D	1.00E+00	5.76E-10							
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	5.76E-10							
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	5.76E-10							
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	5.76E-10	1.1E-02	1.6E+06			1.1E-02		1.6E+06
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	5.76E-10							
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	5.76E-10	1.4E+00	1.2E+04			1.4E+00		1.2E+04
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	5.76E-10							
SVOC	Acenaphthene	83-32-9		1.00E+00	5.76E-10			1.30E-01	4.14E-10			

**Attachment B.14: Cancer Risk Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{sed} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Acetophenone	98-86-2	D	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Anthracene	120-12-7	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Benzaldehyde	100-52-7		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	5.76E-10	7.3E-01	2.4E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	1.4E+04
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	5.76E-10	7.3E+00	2.4E+03	1.30E-01	4.14E-10	7.3E+00	3.3E+03	1.4E+03
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	5.76E-10	7.3E-01	2.4E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	1.4E+04
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	5.76E-10	7.3E-02	2.4E+05	1.30E-01	4.14E-10	7.3E-02	3.3E+05	1.4E+05
SVOC	Biphenyl	92-52-4	D	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	5.76E-10	1.4E-02	1.2E+06	1.00E-01	3.18E-10	1.4E-02	2.2E+06	8.0E+05
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Caprolactam	105-60-2		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Carbazole	86-74-8	B2	1.00E+00	5.76E-10	2.0E-02	8.7E+05	1.00E-01	3.18E-10	2.0E-02	1.6E+06	5.6E+05
SVOC	4-Chloroaniline	106-47-8		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Chrysene	218-01-9	B2	1.00E+00	5.76E-10	7.3E-03	2.4E+06	1.30E-01	4.14E-10	7.3E-03	3.3E+06	1.4E+06
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	5.76E-10	7.3E+00	2.4E+03	1.30E-01	4.14E-10	7.3E+00	3.3E+03	1.4E+03
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	5.76E-10	6.8E-01	2.6E+04	1.00E-01	3.18E-10	6.8E-01	4.6E+04	1.6E+04
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Fluoranthene	206-44-0	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Fluorene	86-73-7	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	5.76E-10	1.6E+00	1.1E+04	1.00E-01	3.18E-10	1.6E+00	2.0E+04	7.0E+03
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	5.76E-10	7.8E-02	2.2E+05	1.00E-01	3.18E-10	7.8E-02	4.0E+05	1.4E+05
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	5.76E-10	7.3E-01	2.4E+04	1.30E-01	4.14E-10	7.3E-01	3.3E+04	1.4E+04
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Naphthalene	91-20-3	C	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Phenanthrene	85-01-8	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
SVOC	Phenol	108-95-2	ID	1.00E+00	5.76E-10			1.00E-01	3.18E-10			
SVOC	Pyrene	129-00-0	D	1.00E+00	5.76E-10			1.30E-01	4.14E-10			
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	5.76E-10	2.0E+00	8.7E+03	1.40E-01	4.46E-10	2.0E+00	1.1E+04	4.9E+03
INORG	Aluminum	7429-90-5	D	1.00E+00	5.76E-10							
INORG	Antimony	7440-36-0		1.00E+00	5.76E-10							

**Attachment B.14: Cancer Risk Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{sed} (mg/kg)	LADD (mg/kg/d)	SF _{oral} (mg/kg/d) ⁻¹	RBC (mg/kg)	ABS _d	LADD (mg/kg/d)	SF _{derm} (mg/kg/d) ⁻¹	RBC (mg/kg)	
INORG	Arsenic	7440-38-2	A	1.00E+00	5.76E-10	1.5E+00	1.2E+04	3.00E-02	9.55E-11	1.5E+00	7.0E+04	9.9E+03
INORG	Barium	7440-39-3	D	1.00E+00	5.76E-10							
INORG	Beryllium	7440-41-7	B1	1.00E+00	5.76E-10							
INORG	Cadmium	7440-43-9	B1	1.00E+00	5.76E-10			1.00E-03	3.18E-12			
INORG	Chromium (total)	7440-47-3		1.00E+00	5.76E-10							
INORG	Cobalt	7440-48-4	B1	1.00E+00	5.76E-10							
INORG	Copper	7440-50-8	D	1.00E+00	5.76E-10							
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	5.76E-10							
INORG	Cyanide (total)	57-12-5	D	1.00E+00	5.76E-10							
INORG	Iron	7439-89-6	D	1.00E+00	5.76E-10							
INORG	Lead	7439-92-1	B2	1.00E+00	5.76E-10							
INORG	Manganese	7439-96-5	D	1.00E+00	5.76E-10							
INORG	Mercury	7439-97-6	D	1.00E+00	5.76E-10							
INORG	Nickel	7440-02-0	A	1.00E+00	5.76E-10							
INORG	Selenium	7782-49-2	D	1.00E+00	5.76E-10							
INORG	Silver	7440-22-4	D	1.00E+00	5.76E-10							
INORG	Thallium	7440-28-0		1.00E+00	5.76E-10							
INORG	Vanadium	7440-62-2		1.00E+00	5.76E-10							
INORG	Zinc	7440-66-6	D	1.00E+00	5.76E-10							

**Attachment B.14: Hazard Index Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	
VOC	Acetone	67-64-1	ID	1.00E+00	4.03E-09	9.0E-01	2.23E+08			9.0E-01		2.23E+08
VOC	Benzene	71-43-2	A	1.00E+00	4.03E-09	4.0E-03	9.93E+05			4.0E-03		9.93E+05
VOC	Bromodichloromethane	75-27-4	B2	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
VOC	Bromomethane	74-83-9	D	1.00E+00	4.03E-09	1.4E-03	3.47E+05			1.4E-03		3.47E+05
VOC	2-Butanone	78-93-3	ID	1.00E+00	4.03E-09	6.0E-01	1.49E+08			6.0E-01		1.49E+08
VOC	Carbon Disulfide	75-15-0		1.00E+00	4.03E-09	1.0E-01	2.48E+07			1.0E-01		2.48E+07
VOC	Chlorobenzene	108-90-7	D	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
VOC	Chloroethane	75-00-3		1.00E+00	4.03E-09	4.0E-01	9.93E+07			4.0E-01		9.93E+07
VOC	Chloroform	67-66-3	B2	1.00E+00	4.03E-09	1.0E-02	2.48E+06			1.0E-02		2.48E+06
VOC	Chloromethane	74-87-3	D	1.00E+00	4.03E-09							
VOC	Cumene	98-82-8	D	1.00E+00	4.03E-09	1.0E-01	2.48E+07			1.0E-01		2.48E+07
VOC	Cyclohexane	110-82-7	ID	1.00E+00	4.03E-09							
VOC	Dibromochloromethane	124-48-1	C	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
VOC	1,2-Dichlorobenzene	95-50-1	D	1.00E+00	4.03E-09	9.0E-02	2.23E+07			9.0E-02		2.23E+07
VOC	1,3-Dichlorobenzene	541-73-1	D	1.00E+00	4.03E-09	9.0E-04	2.23E+05			9.0E-04		2.23E+05
VOC	1,4-Dichlorobenzene	106-46-7	C	1.00E+00	4.03E-09	3.0E-02	7.45E+06			3.0E-02		7.45E+06
VOC	Dichlorodifluoromethane	75-71-8		1.00E+00	4.03E-09	2.0E-01	4.96E+07			2.0E-01		4.96E+07
VOC	1,1-Dichloroethane	75-34-3	C	1.00E+00	4.03E-09	1.0E-01	2.48E+07			1.0E-01		2.48E+07
VOC	1,2-Dichloroethane	107-06-2	B2	1.00E+00	4.03E-09	3.0E-02	7.45E+06			3.0E-02		7.45E+06
VOC	cis-1,2-Dichloroethene	156-59-2	D	1.00E+00	4.03E-09	1.0E-02	2.48E+06			1.0E-02		2.48E+06
VOC	trans-1,2-Dichloroethene	156-60-5		1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
VOC	Ethyl Benzene	100-41-4	D	1.00E+00	4.03E-09	1.0E-01	2.48E+07			1.0E-01		2.48E+07
VOC	2-Hexanone	591-78-6		1.00E+00	4.03E-09	4.0E-02	9.93E+06			4.0E-02		9.93E+06
VOC	Methyl Acetate	79-20-9		1.00E+00	4.03E-09	1.0E+00	2.48E+08			1.0E+00		2.48E+08
VOC	Methyl tert-butyl ether	1634-04-4		1.00E+00	4.03E-09							
VOC	4-Methyl-2-pentanone	108-10-1	ID	1.00E+00	4.03E-09							
VOC	Methylcyclohexane	108-87-2		1.00E+00	4.03E-09							
VOC	Methylene Chloride	75-09-2	B2	1.00E+00	4.03E-09	6.0E-02	1.49E+07			6.0E-02		1.49E+07
VOC	Tetrachloroethene	127-18-4	C-B2	1.00E+00	4.03E-09	1.0E-02	2.48E+06			1.0E-02		2.48E+06
VOC	Toluene	108-88-3	D	1.00E+00	4.03E-09	2.0E-01	4.96E+07			2.0E-01		4.96E+07
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1.00E+00	4.03E-09	1.0E-02	2.48E+06			1.0E-02		2.48E+06
VOC	1,1,1-Trichloroethane	71-55-6	D	1.00E+00	4.03E-09	2.8E-01	6.95E+07			2.8E-01		6.95E+07
VOC	Trichloroethene	79-01-6	C-B2	1.00E+00	4.03E-09	6.0E-03	1.49E+06			6.0E-03		1.49E+06
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1.00E+00	4.03E-09	3.0E+01	7.45E+09			3.0E+01		7.45E+09
VOC	Vinyl Chloride	75-01-4	A	1.00E+00	4.03E-09	3.0E-03	7.45E+05			3.0E-03		7.45E+05

**Attachment B.14: Hazard Index Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	
VOC	Xylenes (total)	1330-20-7	ID	1.00E+00	4.03E-09	2.0E-01	4.96E+07			2.0E-01		4.96E+07
SVOC	Acenaphthene	83-32-9		1.00E+00	4.03E-09	6.0E-02	1.49E+07	1.30E-01	2.90E-09	6.0E-02	2.07E+07	8.66E+06
SVOC	Acenaphthylene	208-96-8	D	1.00E+00	4.03E-09	3.0E-02	7.45E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	4.33E+06
SVOC	Acetophenone	98-86-2	D	1.00E+00	4.03E-09	1.0E-01	2.48E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	1.60E+07
SVOC	Anthracene	120-12-7	D	1.00E+00	4.03E-09	3.0E-01	7.45E+07	1.30E-01	2.90E-09	3.0E-01	1.04E+08	4.33E+07
SVOC	Benzaldehyde	100-52-7		1.00E+00	4.03E-09	1.0E-01	2.48E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	1.60E+07
SVOC	Benzo(a)anthracene	56-55-3	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Benzo(a)pyrene	50-32-8	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1.00E+00	4.03E-09	3.0E-02	7.45E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	4.33E+06
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Biphenyl	92-52-4	D	1.00E+00	4.03E-09	5.0E-02	1.24E+07	1.00E-01	2.23E-09	5.0E-02	2.24E+07	7.99E+06
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1.00E+00	4.03E-09	2.0E-02	4.96E+06	1.00E-01	2.23E-09	2.0E-02	8.98E+06	3.20E+06
SVOC	Butylbenzylphthalate	85-68-7	C	1.00E+00	4.03E-09	2.0E-01	4.96E+07	1.00E-01	2.23E-09	2.0E-01	8.98E+07	3.20E+07
SVOC	Caprolactam	105-60-2		1.00E+00	4.03E-09	5.0E-01	1.24E+08	1.00E-01	2.23E-09	5.0E-01	2.24E+08	7.99E+07
SVOC	Carbazole	86-74-8	B2	1.00E+00	4.03E-09			1.00E-01	2.23E-09			
SVOC	4-Chloroaniline	106-47-8		1.00E+00	4.03E-09	4.0E-03	9.93E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	6.39E+05
SVOC	Chrysene	218-01-9	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	Dibenzofuran	132-64-9	D	1.00E+00	4.03E-09	4.0E-03	9.93E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	6.39E+05
SVOC	Diethylphthalate	84-66-2	D	1.00E+00	4.03E-09	8.0E-01	1.99E+08	1.00E-01	2.23E-09	8.0E-01	3.59E+08	1.28E+08
SVOC	2,4-Dimethylphenol	105-67-9		1.00E+00	4.03E-09	2.0E-02	4.96E+06	1.00E-01	2.23E-09	2.0E-02	8.98E+06	3.20E+06
SVOC	Di-n-butylphthalate	84-74-2	D	1.00E+00	4.03E-09	1.0E-01	2.48E+07	1.00E-01	2.23E-09	1.0E-01	4.49E+07	1.60E+07
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1.00E+00	4.03E-09	1.0E-03	2.48E+05	1.00E-01	2.23E-09	1.0E-03	4.49E+05	1.60E+05
SVOC	Di-n-octylphthalate	117-84-0		1.00E+00	4.03E-09	4.0E-02	9.93E+06	1.00E-01	2.23E-09	4.0E-02	1.80E+07	6.39E+06
SVOC	Fluoranthene	206-44-0	D	1.00E+00	4.03E-09	4.0E-02	9.93E+06	1.30E-01	2.90E-09	4.0E-02	1.38E+07	5.78E+06
SVOC	Fluorene	86-73-7	D	1.00E+00	4.03E-09	4.0E-02	9.93E+06	1.30E-01	2.90E-09	4.0E-02	1.38E+07	5.78E+06
SVOC	Hexachlorobenzene	118-74-1	B2	1.00E+00	4.03E-09	8.0E-04	1.99E+05	1.00E-01	2.23E-09	8.0E-04	3.59E+05	1.28E+05
SVOC	Hexachlorobutadiene	87-68-3	C	1.00E+00	4.03E-09	3.0E-04	7.45E+04	1.00E-01	2.23E-09	3.0E-04	1.35E+05	4.79E+04
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1.00E+00	4.03E-09			1.30E-01	2.90E-09			
SVOC	2-Methylnaphthalene	91-57-6	ID	1.00E+00	4.03E-09	4.0E-03	9.93E+05	1.00E-01	2.23E-09	4.0E-03	1.80E+06	6.39E+05
SVOC	Methylphenol (total)	1319-77-3		1.00E+00	4.03E-09	5.0E-02	1.24E+07	1.00E-01	2.23E-09	5.0E-02	2.24E+07	7.99E+06
SVOC	Naphthalene	91-20-3	C	1.00E+00	4.03E-09	2.0E-02	4.96E+06	1.30E-01	2.90E-09	2.0E-02	6.90E+06	2.89E+06
SVOC	Phenanthrene	85-01-8	D	1.00E+00	4.03E-09	3.0E-02	7.45E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	4.33E+06
SVOC	Phenol	108-95-2	ID	1.00E+00	4.03E-09	3.0E-01	7.45E+07	1.00E-01	2.23E-09	3.0E-01	1.35E+08	4.79E+07

**Attachment B.14: Hazard Index Calculations for Exposure of Trespassers to Stream Sediment
Bedford, Indiana**

Chem Group	Chemical	CASRN	Carc Class	Sediment Ingestion				Sediment Dermal Contact				Combined RBC (mg/kg)
				C _{soil} (mg/kg)	ADD (mg/kg/d)	RfD _{oral} (mg/kg/d)	RBC (mg/kg)	ABS _d	ADD (mg/kg/d)	RfD _{derm} (mg/kg/d)	RBC (mg/kg)	
SVOC	Pyrene	129-00-0	D	1.00E+00	4.03E-09	3.0E-02	7.45E+06	1.30E-01	2.90E-09	3.0E-02	1.04E+07	4.33E+06
P/PCB	PCBs (total)	1336-36-3	B2	1.00E+00	4.03E-09	2.0E-05	4.96E+03	1.40E-01	3.12E-09	2.0E-05	6.41E+03	2.80E+03
INORG	Aluminum	7429-90-5	D	1.00E+00	4.03E-09	1.0E+00	2.48E+08			1.0E+00		2.48E+08
INORG	Antimony	7440-36-0		1.00E+00	4.03E-09	4.0E-04	9.93E+04			6.0E-05		9.93E+04
INORG	Arsenic	7440-38-2	A	1.00E+00	4.03E-09	3.0E-04	7.45E+04	3.00E-02	6.68E-10	3.0E-04	4.49E+05	6.39E+04
INORG	Barium	7440-39-3	D	1.00E+00	4.03E-09	7.0E-02	1.74E+07			7.0E-02		1.74E+07
INORG	Beryllium	7440-41-7	B1	1.00E+00	4.03E-09	2.0E-03	4.96E+05			1.4E-05		4.96E+05
INORG	Cadmium	7440-43-9	B1	1.00E+00	4.03E-09	1.0E-03	2.48E+05	1.00E-03	2.23E-11	2.5E-05	1.12E+06	2.03E+05
INORG	Chromium (total)	7440-47-3		1.00E+00	4.03E-09	3.0E-03	7.45E+05			7.5E-05		7.45E+05
INORG	Cobalt	7440-48-4	B1	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
INORG	Copper	7440-50-8	D	1.00E+00	4.03E-09	4.0E-02	9.93E+06			4.0E-02		9.93E+06
INORG	Cyanide (amenable)	57-12-5A	D	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
INORG	Cyanide (total)	57-12-5	D	1.00E+00	4.03E-09	2.0E-02	4.96E+06			2.0E-02		4.96E+06
INORG	Iron	7439-89-6	D	1.00E+00	4.03E-09	3.0E-01	7.45E+07			3.0E-01		7.45E+07
INORG	Lead	7439-92-1	B2	1.00E+00	4.03E-09							
INORG	Manganese	7439-96-5	D	1.00E+00	4.03E-09	1.4E-01	3.47E+07			5.6E-03		3.47E+07
INORG	Mercury	7439-97-6	D	1.00E+00	4.03E-09	3.0E-04	7.45E+04			2.1E-05		7.45E+04
INORG	Nickel	7440-02-0	A	1.00E+00	4.03E-09	2.0E-02	4.96E+06			8.0E-04		4.96E+06
INORG	Selenium	7782-49-2	D	1.00E+00	4.03E-09	5.0E-03	1.24E+06			5.0E-03		1.24E+06
INORG	Silver	7440-22-4	D	1.00E+00	4.03E-09	5.0E-03	1.24E+06			2.0E-04		1.24E+06
INORG	Thallium	7440-28-0		1.00E+00	4.03E-09	7.0E-05	1.74E+04			7.0E-05		1.74E+04
INORG	Vanadium	7440-62-2		1.00E+00	4.03E-09	7.0E-03	1.74E+06			1.8E-04		1.74E+06
INORG	Zinc	7440-66-6	D	1.00E+00	4.03E-09	3.0E-01	7.45E+07			3.0E-01		7.45E+07

A T T A C H M E N T B . 1 5

Exposure of Trespassers to Stream Surface Water

**Attachment B.15: Incremental Risk Estimates of Risk and HQ for Trespasser Exposure to Stream Surface Water
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Max Surface Water Conc (mg/L)	Site-Specific Trespasser Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Trespasser Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
WS10-12	VOC	Acetone	67-64-1	ID	1.40E-02		3.89E+04		3.6E-07
WS10-12	VOC	Bromodichloromethane	75-27-4	B2	7.30E-03	1.34E+01	2.38E+02	5.4E-09	3.1E-05
WS10-12	VOC	Chloroform	67-66-3	B2	1.30E-02	5.34E+01	1.25E+02	2.4E-09	1.0E-04
WS10-12	VOC	Chloromethane	74-87-3	D	1.40E-04		2.05E+03		6.8E-08
WS10-12	P/PCB	PCBs (total)	1336-36-3	B2	6.48E-04	2.93E-03	1.68E-03	2.2E-06	3.9E-01
WS10-12	INORG	Antimony	7440-36-0		3.50E-03		9.90E+00		3.5E-04
WS10-12	INORG	Barium	7440-39-3	D	7.70E-02		6.07E+03		1.3E-05
WS10-12	INORG	Cadmium	7440-43-9	B1	4.10E-04		4.62E+00		8.9E-05
WS10-12	INORG	Calcium	7440-70-2		8.39E+01				
WS10-12	INORG	Cyanide (total)	57-12-5	D	1.70E-03		1.73E+03		9.8E-07
WS10-12	INORG	Iron	7439-89-6	D	2.20E-01		2.60E+04		8.5E-06
WS10-12	INORG	Magnesium	7439-95-4		9.40E+00				
WS10-12	INORG	Manganese	7439-96-5	D	4.80E-02		1.05E+03		4.6E-05
WS10-12	INORG	Nickel	7440-02-0	A	5.00E-03		6.27E+02		8.0E-06
WS10-12	INORG	Zinc	7440-66-6	D	2.90E-02		3.16E+04		9.2E-07

Notes:

- Only detected constituents are shown.
- WS10-12 represents the area within a half mile of warning signs (WS) 10 to 12 and 30 feet from the stream, including the area between the northern and southern branches.

A T T A C H M E N T B . 1 6

Exposure of Construction Workers to Off-Site Soil

Attachment B.16: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Soil Bedford, Indiana												
Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P002	VOC	Acetone	67-64-1	ID	2	1	7.70E-03			2.7E+06		2.9E-09
P002	VOC	Ethyl Benzene	100-41-4	D	2	1	6.90E-04			3.5E+05		1.9E-09
P002	VOC	Methyl Acetate	79-20-9		2	1	6.40E-02			8.1E+06		7.9E-09
P002	VOC	Methylene Chloride	75-09-2	B2	2	1	1.40E-03		2.5E+04	4.1E+05	5.6E-13	3.4E-09
P002	VOC	Toluene	108-88-3	D	2	1	1.00E-03			1.2E+05		8.4E-09
P002	SVOC	Benzo(b)fluoranthene	205-99-2	B2	2	1	5.00E-01		1.7E+03		3.0E-09	
P002	SVOC	Chrysene	218-01-9	B2	2	1	4.00E-01		1.7E+05		2.4E-11	
P002	SVOC	Fluoranthene	206-44-0	D	2	1	4.85E-01			6.9E+05		7.0E-07
P002	SVOC	Phenanthrene	85-01-8	D	2	1	4.50E-01			4.9E+05		9.1E-07
P002	SVOC	Pyrene	129-00-0	D	2	1	4.40E-01			5.2E+05		8.4E-07
P002	P/PCB	PCBs (total)	1336-36-3	B2	37	21	5.05E+01		5.6E+02	3.5E+02	9.0E-07	1.4E-01
P002	INORG	Aluminum	7429-90-5	D	2	2	3.04E+04	1.48E+04		2.2E+06		7.0E-03
P002	INORG	Arsenic	7440-38-2	A	2	2	1.03E+01	1.13E+01	9.5E+02	7.0E+03		
P002	INORG	Barium	7440-39-3	D	2	2	9.20E+01	8.38E+01		1.8E+06		4.6E-06
P002	INORG	Beryllium	7440-41-7	B1	2	2	9.70E-01	5.70E-01	1.4E+04	8.2E+03	2.8E-10	4.9E-05
P002	INORG	Cadmium	7440-43-9	B1	2	2	3.20E+00	5.52E-01	1.9E+04	1.8E+04	1.4E-09	1.4E-04
P002	INORG	Chromium (total)	7440-47-3		2	2	4.04E+01	2.82E+01	2.8E+03	7.7E+04	4.3E-08	1.6E-04
P002	INORG	Cobalt	7440-48-4	B1	2	2	1.38E+01	1.00E+01	1.2E+04	9.6E+03	3.1E-09	3.9E-04
P002	INORG	Copper	7440-50-8	D	2	2	8.36E+02	1.89E+01		1.0E+06		8.1E-04
P002	INORG	Iron	7439-89-6	D	2	2	2.66E+04	2.44E+04		7.7E+06		2.9E-04
P002	INORG	Manganese	7439-96-5	D	2	2	6.32E+02	6.76E+02		2.4E+04		
P002	INORG	Mercury	7439-97-6	D	2	2	9.00E-02	7.05E-02		2.7E+03		7.2E-06
P002	INORG	Nickel	7440-02-0	A	2	2	5.10E+01	1.83E+01	1.4E+05	5.1E+05	2.3E-09	6.4E-05
P002	INORG	Selenium	7782-49-2	D	2	1	1.90E+00	3.96E-01		1.3E+05		1.2E-05
P002	INORG	Silver	7440-22-4	D	2	1	3.00E-01			4.7E+03		6.4E-05
P002	INORG	Thallium	7440-28-0		2	2	1.30E+00	8.40E-01		1.8E+03		2.6E-04
P002	INORG	Vanadium	7440-62-2		2	2	3.50E+01	4.18E+01		1.8E+05		
P002	INORG	Zinc	7440-66-6	D	2	2	8.49E+02	5.48E+01		7.6E+06		1.1E-04
P023	P/PCB	PCBs (total)	1336-36-3	B2	31	31	5.75E+01		5.6E+02	3.5E+02	1.0E-06	1.6E-01
P024	P/PCB	PCBs (total)	1336-36-3	B2	12	10	1.02E+02		5.6E+02	3.5E+02	1.8E-06	2.9E-01
P025	P/PCB	PCBs (total)	1336-36-3	B2	23	21	3.69E+02		5.6E+02	3.5E+02	6.6E-06	1.1E+00
P027	P/PCB	PCBs (total)	1336-36-3	B2	17	5	8.93E+01		5.6E+02	3.5E+02	1.6E-06	2.6E-01
P028	VOC	Methyl Acetate	79-20-9		3	3	1.60E-02			8.1E+06		2.0E-09
P028	VOC	Methylcyclohexane	108-87-2		3	1	2.20E-03			2.5E+05		8.7E-09
P028	VOC	Toluene	108-88-3	D	3	1	9.20E-04			1.2E+05		7.8E-09
P028	SVOC	Benzo(a)anthracene	56-55-3	B2	3	1	1.20E-01		1.7E+03		7.1E-10	
P028	SVOC	Benzo(a)pyrene	50-32-8	B2	3	1	1.50E-01		1.7E+02		8.8E-09	
P028	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	1.60E-01		1.7E+03		9.6E-10	
P028	SVOC	Benzo(g,h,i)perylene	191-24-2	D	3	1	1.30E-01			5.3E+05		2.5E-07
P028	SVOC	Benzo(k)fluoranthene	207-08-9	B2	3	1	9.30E-02		1.7E+04		5.5E-11	
P028	SVOC	Chrysene	218-01-9	B2	3	1	1.40E-01		1.7E+05		8.5E-12	
P028	SVOC	Fluoranthene	206-44-0	D	3	1	2.30E-01			6.9E+05		3.3E-07
P028	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3	1	1.10E-01		1.7E+03		6.5E-10	
P028	SVOC	Phenanthrene	85-01-8	D	3	1	1.10E-01			4.9E+05		2.2E-07
P028	SVOC	Pyrene	129-00-0	D	3	1	2.30E-01			5.2E+05		4.4E-07
P028	P/PCB	PCBs (total)	1336-36-3	B2	45	33	2.04E+02		5.6E+02	3.5E+02	3.6E-06	5.8E-01
P028	INORG	Aluminum	7429-90-5	D	3	3	8.94E+03	1.48E+04		2.2E+06		
P028	INORG	Arsenic	7440-38-2	A	3	3	6.70E+00	1.13E+01	9.5E+02	7.0E+03		
P028	INORG	Barium	7440-39-3	D	3	3	7.36E+01	8.38E+01		1.8E+06		
P028	INORG	Beryllium	7440-41-7	B1	3	3	3.65E-01	5.70E-01	1.4E+04	8.2E+03		
P028	INORG	Cadmium	7440-43-9	B1	3	3	6.65E-01	5.52E-01	1.9E+04	1.8E+04	6.0E-11	6.2E-06
P028	INORG	Chromium (total)	7440-47-3		3	3	3.89E+01	2.82E+01	2.8E+03	7.7E+04	3.8E-08	1.4E-04
P028	INORG	Cobalt	7440-48-4	B1	3	3	2.52E+01	1.00E+01	1.2E+04	9.6E+03	1.2E-08	1.6E-03
P028	INORG	Copper	7440-50-8	D	3	3	5.02E+01	1.89E+01		1.0E+06		3.1E-05
P028	INORG	Iron	7439-89-6	D	3	3	1.57E+04	2.44E+04		7.7E+06		
P028	INORG	Manganese	7439-96-5	D	3	3	8.94E+02	6.76E+02		2.4E+04		9.0E-03
P028	INORG	Mercury	7439-97-6	D	3	3	2.00E+00	7.05E-02		2.7E+03		7.2E-04
P028	INORG	Nickel	7440-02-0	A	3	3	6.14E+01	1.83E+01	1.4E+05	5.1E+05	3.0E-09	8.4E-05
P028	INORG	Selenium	7782-49-2	D	3	1	4.40E-01	3.96E-01		1.3E+05		3.5E-07
P028	INORG	Silver	7440-22-4	D	3	2	7.00E-01			4.7E+03		1.5E-04
P028	INORG	Vanadium	7440-62-2		3	3	2.22E+01	4.18E+01		1.8E+05		
P028	INORG	Zinc	7440-66-6	D	3	3	1.11E+02	5.48E+01		7.6E+06		7.4E-06
P029	P/PCB	PCBs (total)	1336-36-3	B2	3	3	8.74E+00		5.6E+02	3.5E+02	1.6E-07	2.5E-02
P030	VOC	Methyl Acetate	79-20-9		3	3	1.00E-02			8.1E+06		1.2E-09
P030	SVOC	Benzo(b)fluoranthene	205-99-2	B2	3	1	9.70E-02		1.7E+03		5.8E-10	
P030	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3	1	8.70E-02		9.5E+04	3.8E+05	9.2E-12	2.3E-07
P030	SVOC	Chrysene	218-01-9	B2	3	1	8.50E-02		1.7E+05		5.1E-12	
P030	SVOC	Fluoranthene	206-44-0	D	3	1	1.30E-01			6.9E+05		1.9E-07
P030	SVOC	Pyrene	129-00-0	D	3	1	1.40E-01			5.2E+05		2.7E-07
P030	P/PCB	PCBs (total)	1336-36-3	B2	54	32	1.65E+02		5.6E+02	3.5E+02	2.9E-06	4.7E-01
P030	INORG	Aluminum	7429-90-5	D	3	3	9.86E+03	1.48E+04		2.2E+06		
P030	INORG	Arsenic	7440-38-2	A	3	3	6.90E+00	1.13E+01	9.5E+02	7.0E+03		
P030	INORG	Barium	7440-39-3	D	3	3	9.17E+01	8.38E+01		1.8E+06		4.4E-06
P030	INORG	Beryllium	7440-41-7	B1	3	3	4.20E-01	5.70E-01	1.4E+04	8.2E+03		
P030	INORG	Cadmium	7440-43-9	B1	3	3	7.90E-01	5.52E-01	1.9E+04	1.8E+04	1.3E-10	1.3E-05
P030	INORG	Chromium (total)	7440-47-3		3	3	1.78E+01	2.82E+01	2.8E+03	7.7E+04		
P030	INORG	Cobalt	7440-48-4	B1	3	3	1.16E+01	1.00E+01	1.2E+04	9.6E+03	1.3E-09	1.6E-04
P030	INORG	Copper	7440-50-8	D	3	3	3.74E+01	1.89E+01		1.0E+06		1.8E-05
P030	INORG	Iron	7439-89-6	D	3	3	1.75E+04	2.44E+04		7.7E+06		
P030	INORG	Manganese	7439-96-5	D	3	3	1.19E+03	6.76E+02		2.4E+04		2.1E-02

Attachment B.16: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Soil Bedford, Indiana												
Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P030	INORG	Mercury	7439-97-6	D	3	2	2.80E-01	7.05E-02		2.7E+03		7.8E-05
P030	INORG	Nickel	7440-02-0	A	3	3	1.86E+01	1.83E+01	1.4E+05	5.1E+05	2.1E-11	5.7E-07
P030	INORG	Selenium	7782-49-2	D	3	1	5.60E-01	3.96E-01		1.3E+05		1.3E-06
P030	INORG	Silver	7440-22-4	D	3	1	2.20E-01			4.7E+03		4.7E-05
P030	INORG	Vanadium	7440-62-2	D	3	3	2.42E+01	4.18E+01		1.8E+05		
P030	INORG	Zinc	7440-66-6	D	3	3	8.94E+01	5.48E+01		7.6E+06		4.6E-06
P036	P/PCB	PCBs (total)	1336-36-3	B2	65	53	8.28E+01		5.6E+02	3.5E+02	1.5E-06	2.4E-01
P036	INORG	Aluminum	7429-90-5	D	4	4	9.35E+03	1.48E+04		2.2E+06		
P036	INORG	Arsenic	7440-38-2	A	4	4	6.80E+00	1.13E+01	9.5E+02	7.0E+03		
P036	INORG	Barium	7440-39-3	D	4	4	8.67E+01	8.38E+01		1.8E+06		1.6E-06
P036	INORG	Beryllium	7440-41-7	B1	4	4	6.70E-01	5.70E-01	1.4E+04	8.2E+03	7.0E-11	1.2E-05
P036	INORG	Cadmium	7440-43-9	B1	4	4	4.80E-01	5.52E-01	1.9E+04	1.8E+04		
P036	INORG	Chromium (total)	7440-47-3		4	4	1.40E+01	2.82E+01	2.8E+03	7.7E+04		
P036	INORG	Cobalt	7440-48-4	B1	4	4	9.80E+00	1.00E+01	1.2E+04	9.6E+03		
P036	INORG	Copper	7440-50-8	D	4	4	1.83E+01	1.89E+01		1.0E+06		
P036	INORG	Iron	7439-89-6	D	4	4	1.69E+04	2.44E+04		7.7E+06		
P036	INORG	Manganese	7439-96-5	D	4	4	9.19E+02	6.76E+02		2.4E+04		1.0E-02
P036	INORG	Mercury	7439-97-6	D	4	1	1.10E-01	7.05E-02		2.7E+03		1.5E-05
P036	INORG	Nickel	7440-02-0	A	4	4	1.56E+01	1.83E+01	1.4E+05	5.1E+05		
P036	INORG	Selenium	7782-49-2	D	4	2	6.90E-01	3.96E-01		1.3E+05		2.3E-06
P036	INORG	Vanadium	7440-62-2		4	4	2.37E+01	4.18E+01		1.8E+05		
P036	INORG	Zinc	7440-66-6	D	4	4	7.43E+01	5.48E+01		7.6E+06		2.6E-06
P037/P237	P/PCB	PCBs (total)	1336-36-3	B2	14	12	6.35E+01		5.6E+02	3.5E+02	1.1E-06	1.8E-01
P037/P237	INORG	Aluminum	7429-90-5	D	1	1	9.35E+03	1.48E+04		2.2E+06		
P037/P237	INORG	Arsenic	7440-38-2	A	1	1	6.70E+00	1.13E+01	9.5E+02	7.0E+03		
P037/P237	INORG	Barium	7440-39-3	D	1	1	8.52E+01	8.38E+01		1.8E+06		7.8E-07
P037/P237	INORG	Beryllium	7440-41-7	B1	1	1	6.40E-01	5.70E-01	1.4E+04	8.2E+03	4.9E-11	8.6E-06
P037/P237	INORG	Cadmium	7440-43-9	B1	1	1	3.90E-01	5.52E-01	1.9E+04	1.8E+04		
P037/P237	INORG	Chromium (total)	7440-47-3		1	1	1.34E+01	2.82E+01	2.8E+03	7.7E+04		
P037/P237	INORG	Cobalt	7440-48-4	B1	1	1	9.50E+00	1.00E+01	1.2E+04	9.6E+03		
P037/P237	INORG	Copper	7440-50-8	D	1	1	1.51E+01	1.89E+01		1.0E+06		
P037/P237	INORG	Iron	7439-89-6	D	1	1	1.65E+04	2.44E+04		7.7E+06		
P037/P237	INORG	Manganese	7439-96-5	D	1	1	8.90E+02	6.76E+02		2.4E+04		8.8E-03
P037/P237	INORG	Nickel	7440-02-0	A	1	1	1.51E+01	1.83E+01	1.4E+05	5.1E+05		
P037/P237	INORG	Vanadium	7440-62-2		1	1	2.35E+01	4.18E+01		1.8E+05		
P037/P237	INORG	Zinc	7440-66-6	D	1	1	6.48E+01	5.48E+01		7.6E+06		1.3E-06
P038	VOC	Methyl Acetate	79-20-9		1	1	2.40E-02			8.1E+06		3.0E-09
P038	VOC	Toluene	108-88-3	D	1	1	1.80E-03			1.2E+05		1.5E-08
P038	P/PCB	PCBs (total)	1336-36-3	B2	18	15	5.00E+02		5.6E+02	3.5E+02	8.9E-06	1.4E+00
P038	INORG	Aluminum	7429-90-5	D	1	1	1.09E+04	1.48E+04		2.2E+06		
P038	INORG	Arsenic	7440-38-2	A	1	1	7.30E+00	1.13E+01	9.5E+02	7.0E+03		
P038	INORG	Barium	7440-39-3	D	1	1	9.65E+01	8.38E+01		1.8E+06		7.1E-06
P038	INORG	Beryllium	7440-41-7	B1	1	1	7.80E-01	5.70E-01	1.4E+04	8.2E+03	1.5E-10	2.6E-05
P038	INORG	Cadmium	7440-43-9	B1	1	1	6.60E-01	5.52E-01	1.9E+04	1.8E+04	5.7E-11	5.9E-06
P038	INORG	Chromium (total)	7440-47-3		1	1	1.64E+01	2.82E+01	2.8E+03	7.7E+04		
P038	INORG	Cobalt	7440-48-4	B1	1	1	9.40E+00	1.00E+01	1.2E+04	9.6E+03		
P038	INORG	Copper	7440-50-8	D	1	1	1.72E+01	1.89E+01		1.0E+06		
P038	INORG	Cyanide (amenable)	57-12-5A		1	1	7.90E-01			5.0E+05		1.6E-06
P038	INORG	Iron	7439-89-6	D	1	1	1.86E+04	2.44E+04		7.7E+06		
P038	INORG	Manganese	7439-96-5	D	1	1	7.06E+02	6.76E+02		2.4E+04		1.2E-03
P038	INORG	Mercury	7439-97-6	D	1	1	1.10E-01	7.05E-02		2.7E+03		1.5E-05
P038	INORG	Nickel	7440-02-0	A	1	1	1.67E+01	1.83E+01	1.4E+05	5.1E+05		
P038	INORG	Selenium	7782-49-2	D	1	1	6.60E-01	3.96E-01		1.3E+05		2.1E-06
P038	INORG	Vanadium	7440-62-2		1	1	2.78E+01	4.18E+01		1.8E+05		
P038	INORG	Zinc	7440-66-6	D	1	1	7.52E+01	5.48E+01		7.6E+06		2.7E-06
P039_central	VOC	Methyl Acetate	79-20-9		2	2	2.90E-01			8.1E+06		3.6E-08
P039_central	VOC	Methylcyclohexane	108-87-2		2	1	6.50E-03			2.5E+05		2.6E-08
P039_central	VOC	Toluene	108-88-3	D	2	1	5.25E-03			1.2E+05		4.4E-08
P039_central	P/PCB	PCBs (total)	1336-36-3	B2	103	84	3.52E+02		5.6E+02	3.5E+02	6.3E-06	1.0E+00
P039_central	INORG	Aluminum	7429-90-5	D	2	2	1.08E+04	1.48E+04		2.2E+06		
P039_central	INORG	Arsenic	7440-38-2	A	2	2	7.30E+00	1.13E+01	9.5E+02	7.0E+03		
P039_central	INORG	Barium	7440-39-3	D	2	2	9.77E+01	8.38E+01		1.8E+06		7.8E-06
P039_central	INORG	Beryllium	7440-41-7	B1	2	2	7.20E-01	5.70E-01	1.4E+04	8.2E+03	1.1E-10	1.8E-05
P039_central	INORG	Cadmium	7440-43-9	B1	2	2	7.00E-01	5.52E-01	1.9E+04	1.8E+04	7.8E-11	8.1E-06
P039_central	INORG	Chromium (total)	7440-47-3		2	2	1.77E+01	2.82E+01	2.8E+03	7.7E+04		
P039_central	INORG	Cobalt	7440-48-4	B1	2	2	1.22E+01	1.00E+01	1.2E+04	9.6E+03	1.8E-09	2.3E-04
P039_central	INORG	Copper	7440-50-8	D	2	2	2.64E+01	1.89E+01		1.0E+06		7.4E-06
P039_central	INORG	Cyanide (amenable)	57-12-5A		2	1	7.10E-01			5.0E+05		1.4E-06
P039_central	INORG	Iron	7439-89-6	D	2	2	1.85E+04	2.44E+04		7.7E+06		
P039_central	INORG	Manganese	7439-96-5	D	2	2	9.80E+02	6.76E+02		2.4E+04		1.3E-02
P039_central	INORG	Mercury	7439-97-6	D	2	2	2.20E-01	7.05E-02		2.7E+03		5.6E-05
P039_central	INORG	Nickel	7440-02-0	A	2	2	1.88E+01	1.83E+01	1.4E+05	5.1E+05	3.5E-11	9.7E-07
P039_central	INORG	Selenium	7782-49-2	D	2	2	7.70E-01	3.96E-01		1.3E+05		3.0E-06
P039_central	INORG	Silver	7440-22-4	D	2	1	3.45E-01			4.7E+03		7.4E-05
P039_central	INORG	Vanadium	7440-62-2		2	2	2.62E+01	4.18E+01		1.8E+05		
P039_central	INORG	Zinc	7440-66-6	D	2	2	1.03E+02	5.48E+01		7.6E+06		6.3E-06
P039_west	P/PCB	PCBs (total)	1336-36-3	B2	116	80	1.49E+01		5.6E+02	3.5E+02	2.7E-07	4.3E-02
P040	VOC	Methyl Acetate	79-20-9		8	8	4.00E-02			8.1E+06		4.9E-09
P040	VOC	Methylcyclohexane	108-87-2		8	4	1.50E-03			2.5E+05		5.9E-09
P040	VOC	Toluene	108-88-3	D	8	3	1.40E-03			1.2E+05		1.2E-08

Attachment B.16: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Soil Bedford, Indiana												
Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P040	P/PCB	PCBs (total)	1336-36-3	B2	77	71	9.04E+00		5.6E+02	3.5E+02	1.6E-07	2.6E-02
P040	INORG	Aluminum	7429-90-5	D	8	8	1.11E+04	1.48E+04		2.2E+06		
P040	INORG	Arsenic	7440-38-2	A	8	8	7.80E+00	1.13E+01	9.5E+02	7.0E+03		
P040	INORG	Barium	7440-39-3	D	8	8	1.07E+02	8.38E+01		1.8E+06		1.3E-05
P040	INORG	Beryllium	7440-41-7	B1	8	8	8.80E-01	5.70E-01	1.4E+04	8.2E+03	2.2E-10	3.8E-05
P040	INORG	Cadmium	7440-43-9	B1	8	8	6.30E-01	5.52E-01	1.9E+04	1.8E+04	4.1E-11	4.2E-06
P040	INORG	Chromium (total)	7440-47-3		8	8	1.63E+01	2.82E+01	2.8E+03	7.7E+04		
P040	INORG	Cobalt	7440-48-4	B1	8	8	1.03E+01	1.00E+01	1.2E+04	9.6E+03	2.1E-10	2.7E-05
P040	INORG	Copper	7440-50-8	D	8	8	1.86E+01	1.89E+01		1.0E+06		
P040	INORG	Iron	7439-89-6	D	8	8	2.02E+04	2.44E+04		7.7E+06		
P040	INORG	Manganese	7439-96-5	D	8	8	9.50E+02	6.76E+02		2.4E+04		1.1E-02
P040	INORG	Mercury	7439-97-6	D	8	8	8.80E-02	7.05E-02		2.7E+03		6.5E-06
P040	INORG	Nickel	7440-02-0	A	8	8	1.79E+01	1.83E+01	1.4E+05	5.1E+05		
P040	INORG	Selenium	7782-49-2	D	8	5	6.30E-01	3.96E-01		1.3E+05		1.9E-06
P040	INORG	Silver	7440-22-4	D	8	1	2.00E-01			4.7E+03		4.3E-05
P040	INORG	Vanadium	7440-62-2		8	8	2.88E+01	4.18E+01		1.8E+05		
P040	INORG	Zinc	7440-66-6	D	8	8	7.50E+01	5.48E+01		7.6E+06		2.7E-06
P057	P/PCB	PCBs (total)	1336-36-3	B2	13	11	2.58E+00		5.6E+02	3.5E+02	4.6E-08	7.4E-03
P072	P/PCB	PCBs (total)	1336-36-3	B2	11	4	4.58E+00		5.6E+02	3.5E+02	8.2E-08	1.3E-02
P076(GM)	P/PCB	PCBs (total)	1336-36-3	B2	14	9	5.53E+01		5.6E+02	3.5E+02	9.9E-07	1.6E-01
P078	P/PCB	PCBs (total)	1336-36-3	B2	9	9	1.02E+02		5.6E+02	3.5E+02	1.8E-06	2.9E-01
P081	P/PCB	PCBs (total)	1336-36-3	B2	12	10	2.17E+00		5.6E+02	3.5E+02	3.9E-08	6.2E-03
P202/P203/P204	P/PCB	PCBs (total)	1336-36-3	B2	7	5	4.77E+00		5.6E+02	3.5E+02	8.5E-08	1.4E-02
P217	VOC	Acetone	67-64-1	ID	20	1	3.15E-02			2.7E+06		1.2E-08
P217	VOC	Methyl Acetate	79-20-9		20	6	1.60E-02			8.1E+06		2.0E-09
P217	VOC	4-Methyl-2-pentanone	108-10-1	ID	20	1	1.60E-02			2.8E+06		5.6E-09
P217	VOC	Methylcyclohexane	108-87-2		20	1	6.00E-03			2.5E+05		2.4E-08
P217	VOC	Toluene	108-88-3	D	20	1	8.10E-02			1.2E+05		6.8E-07
P217	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		20	2	1.90E-02			3.2E+06		6.0E-09
P217	VOC	Xylenes (total)	1330-20-7	ID	20	1	1.80E-01			4.5E+04		4.0E-06
P217	SVOC	Hexachlorobutadiene	87-68-3	C	21	1	4.80E-01		8.7E+03	5.8E+03	5.5E-10	8.3E-05
P217	SVOC	2-Methylnaphthalene	91-57-6	ID	21	1	4.50E+00			1.4E+04		3.3E-04
P217	SVOC	Phenanthrene	85-01-8	D	21	1	1.10E-01			4.9E+05		2.2E-07
P217	P/PCB	PCBs (total)	1336-36-3	B2	21	9	3.91E-01		5.6E+02	3.5E+02	7.0E-09	1.1E-03
P217	INORG	Aluminum	7429-90-5	D	21	21	2.87E+05	1.48E+04		2.2E+06		1.2E-01
P217	INORG	Antimony	7440-36-0		21	5	1.50E+00	4.40E-01		1.0E+04		1.1E-04
P217	INORG	Arsenic	7440-38-2	A	21	21	2.96E+01	1.13E+01	9.5E+02	7.0E+03	1.9E-07	2.6E-03
P217	INORG	Barium	7440-39-3	D	21	21	1.31E+02	8.38E+01		1.8E+06		2.6E-05
P217	INORG	Beryllium	7440-41-7	B1	21	18	3.90E+00	5.70E-01	1.4E+04	8.2E+03	2.3E-09	4.1E-04
P217	INORG	Cadmium	7440-43-9	B1	21	11	2.04E+01	5.52E-01	1.9E+04	1.8E+04	1.0E-08	1.1E-03
P217	INORG	Chromium (total)	7440-47-3		21	21	1.08E+03	2.82E+01	2.8E+03	7.7E+04	3.7E-06	1.4E-02
P217	INORG	Cobalt	7440-48-4	B1	21	21	2.01E+01	1.00E+01	1.2E+04	9.6E+03	8.3E-09	1.1E-03
P217	INORG	Copper	7440-50-8	D	21	21	8.52E+04	1.89E+01		1.0E+06		8.5E-02
P217	INORG	Cyanide (total)	57-12-5	D	21	3	3.90E-01			5.0E+05		7.7E-07
P217	INORG	Iron	7439-89-6	D	21	21	4.81E+04	2.44E+04		7.7E+06		3.1E-03
P217	INORG	Manganese	7439-96-5	D	21	21	3.15E+03	6.76E+02		2.4E+04		1.0E-01
P217	INORG	Mercury	7439-97-6	D	21	21	1.30E+00	7.05E-02		2.7E+03		4.6E-04
P217	INORG	Nickel	7440-02-0	A	21	21	1.64E+02	1.83E+01	1.4E+05	5.1E+05	1.0E-08	2.9E-04
P217	INORG	Selenium	7782-49-2	D	21	9	3.80E+00	3.96E-01		1.3E+05		2.7E-05
P217	INORG	Silver	7440-22-4	D	21	2	1.36E+01			4.7E+03		2.9E-03
P217	INORG	Thallium	7440-28-0		21	10	4.70E+00	8.40E-01		1.8E+03		2.2E-03
P217	INORG	Vanadium	7440-62-2		21	21	1.09E+02	4.18E+01		1.8E+05		3.8E-04
P217	INORG	Zinc	7440-66-6	D	21	21	2.73E+04	5.48E+01		7.6E+06		3.6E-03
P364	P/PCB	PCBs (total)	1336-36-3	B2	10	10	1.36E+01		5.6E+02	3.5E+02	2.4E-07	3.9E-02
P384/P386	VOC	Acetone	67-64-1	ID	12	5	4.30E-02			2.7E+06		1.6E-08
P384/P386	VOC	Benzene	71-43-2	A	12	1	7.90E-04		1.7E+03	5.8E+03	4.5E-12	1.4E-07
P384/P386	VOC	2-Butanone	78-93-3	ID	12	4	7.20E-03			3.9E+06		1.9E-09
P384/P386	VOC	Carbon Disulfide	75-15-0		12	1	2.10E-03			5.6E+04		3.7E-08
P384/P386	VOC	Cumene	98-82-8	D	12	1	2.80E-03			4.7E+04		6.0E-08
P384/P386	VOC	Cyclohexane	110-82-7	ID	12	1	6.50E-04			5.8E+05		1.1E-09
P384/P386	VOC	1,2-Dichlorobenzene	95-50-1	D	12	1	1.10E-03			2.0E+05		5.4E-09
P384/P386	VOC	1,3-Dichlorobenzene	541-73-1	D	12	1	8.30E-03			2.1E+04		3.9E-07
P384/P386	VOC	1,4-Dichlorobenzene	106-46-7	C	12	1	2.40E-02		9.6E+03	3.9E+05	2.5E-11	6.2E-08
P384/P386	VOC	Ethyl Benzene	100-41-4	D	12	2	2.80E-03			3.5E+05		7.9E-09
P384/P386	VOC	4-Methyl-2-pentanone	108-10-1	ID	12	1	2.50E-03			2.8E+06		8.8E-10
P384/P386	VOC	Methylcyclohexane	108-87-2		12	1	2.00E-03			2.5E+05		7.9E-09
P384/P386	VOC	Toluene	108-88-3	D	12	3	6.20E-03			1.2E+05		5.2E-08
P384/P386	VOC	1,2,4-Trichlorobenzene	120-82-1	D	12	1	2.20E-02			1.8E+05		1.2E-07
P384/P386	VOC	Xylenes (total)	1330-20-7	ID	12	1	1.30E-02			4.5E+04		2.9E-07
P384/P386	SVOC	Acenaphthene	83-32-9		12	3	2.10E-01			8.2E+05		2.6E-07
P384/P386	SVOC	Acenaphthylene	208-96-8	D	12	2	4.20E-02			4.0E+05		1.0E-07
P384/P386	SVOC	Anthracene	120-12-7	D	12	6	1.40E-01			5.4E+06		2.6E-08
P384/P386	SVOC	Benzaldehyde	100-52-7		12	1	4.20E-02			6.1E+05		6.9E-08
P384/P386	SVOC	Benzo(a)anthracene	56-55-3	B2	12	10	3.30E-01		1.7E+03		2.0E-09	
P384/P386	SVOC	Benzo(a)pyrene	50-32-8	B2	12	10	3.10E-01		1.7E+02		1.8E-08	
P384/P386	SVOC	Benzo(b)fluoranthene	205-99-2	B2	12	11	4.40E-01		1.7E+03		2.6E-09	
P384/P386	SVOC	Benzo(g,h,i)perylene	191-24-2	D	12	9	2.80E-01			5.3E+05		5.3E-07
P384/P386	SVOC	Benzo(k)fluoranthene	207-08-9	B2	12	8	2.50E-01		1.7E+04		1.5E-10	
P384/P386	SVOC	Biphenyl	92-52-4	D	12	1	4.90E-02			6.9E+05		7.1E-08
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	12	5	3.50E-01		9.5E+04	3.8E+05	3.7E-11	9.1E-07

Attachment B.16: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Soil Bedford, Indiana												
Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P384/P386	SVOC	Butylbenzylphthalate	85-68-7	C	12	2	4.70E-01			3.8E+06		1.2E-07
P384/P386	SVOC	Caprolactam	105-60-2		12	1	1.10E-02			6.0E+06		1.8E-09
P384/P386	SVOC	Carbazole	86-74-8	B2	12	3	1.10E-01		6.4E+04		1.7E-11	
P384/P386	SVOC	Chrysene	218-01-9	B2	12	10	3.90E-01		1.7E+05		2.4E-11	
P384/P386	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	12	4	5.70E-02		1.7E+02		3.4E-09	
P384/P386	SVOC	Dibenzofuran	132-64-9	D	12	3	2.00E-01			7.2E+04		2.8E-06
P384/P386	SVOC	2,4-Dimethylphenol	105-67-9		12	2	1.40E-01			2.9E+05		4.8E-07
P384/P386	SVOC	Di-n-octylphthalate	117-84-0		12	1	4.30E-01			7.7E+05		5.6E-07
P384/P386	SVOC	Fluoranthene	206-44-0	D	12	12	1.10E+00			6.9E+05		1.6E-06
P384/P386	SVOC	Fluorene	86-73-7	D	12	3	2.40E-01			6.3E+05		3.8E-07
P384/P386	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	12	8	2.20E-01		1.7E+03		1.3E-09	
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	12	3	1.90E-01			1.4E+04		1.4E-05
P384/P386	SVOC	Methylphenol (total)	1319-77-3		12	2	1.02E-01			7.0E+05		1.5E-07
P384/P386	SVOC	Naphthalene	91-20-3	C	12	3	5.70E-01			1.2E+04		4.6E-05
P384/P386	SVOC	Phenanthrene	85-01-8	D	12	8	8.40E-01			4.9E+05		1.7E-06
P384/P386	SVOC	Phenol	108-95-2	ID	12	1	1.10E+00			5.8E+06		1.9E-07
P384/P386	SVOC	Pyrene	129-00-0	D	12	11	8.30E-01			5.2E+05		1.6E-06
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	37	33	3.45E+01		5.6E+02	3.5E+02	6.1E-07	9.9E-02
P384/P386	INORG	Aluminum	7429-90-5	D	12	12	5.74E+04	1.48E+04		2.2E+06		1.9E-02
P384/P386	INORG	Antimony	7440-36-0		12	9	1.50E+00	4.40E-01		1.0E+04		1.1E-04
P384/P386	INORG	Arsenic	7440-38-2	A	12	12	1.97E+01	1.13E+01	9.5E+02	7.0E+03	8.8E-08	1.2E-03
P384/P386	INORG	Barium	7440-39-3	D	12	12	3.57E+02	8.38E+01		1.8E+06		1.5E-04
P384/P386	INORG	Beryllium	7440-41-7	B1	12	6	1.60E+00	5.70E-01	1.4E+04	8.2E+03	7.3E-10	1.3E-04
P384/P386	INORG	Cadmium	7440-43-9	B1	12	11	5.30E+00	5.52E-01	1.9E+04	1.8E+04	2.5E-09	2.6E-04
P384/P386	INORG	Chromium (total)	7440-47-3		12	12	6.57E+01	2.82E+01	2.8E+03	7.7E+04	1.3E-07	4.9E-04
P384/P386	INORG	Cobalt	7440-48-4	B1	12	12	1.51E+01	1.00E+01	1.2E+04	9.6E+03	4.2E-09	5.3E-04
P384/P386	INORG	Copper	7440-50-8	D	12	12	1.97E+03	1.89E+01		1.0E+06		1.9E-03
P384/P386	INORG	Iron	7439-89-6	D	12	12	4.12E+04	2.44E+04		7.7E+06		2.2E-03
P384/P386	INORG	Manganese	7439-96-5	D	12	12	5.89E+02	6.76E+02		2.4E+04		
P384/P386	INORG	Mercury	7439-97-6	D	12	12	1.20E+00	7.05E-02		2.7E+03		4.2E-04
P384/P386	INORG	Nickel	7440-02-0	A	12	12	1.23E+02	1.83E+01	1.4E+05	5.1E+05	7.4E-09	2.0E-04
P384/P386	INORG	Selenium	7782-49-2	D	12	1	9.30E-01	3.96E-01		1.3E+05		4.2E-06
P384/P386	INORG	Silver	7440-22-4	D	12	2	9.50E-01			4.7E+03		2.0E-04
P384/P386	INORG	Thallium	7440-28-0		12	4	1.20E+00	8.40E-01		1.8E+03		2.0E-04
P384/P386	INORG	Vanadium	7440-62-2	D	12	12	7.92E+01	4.18E+01		1.8E+05		2.1E-04
P384/P386	INORG	Zinc	7440-66-6	D	12	12	8.18E+02	5.48E+01		7.6E+06		1.0E-04
P393	P/PCB	PCBs (total)	1336-36-3	B2	18	12	5.27E+00		5.6E+02	3.5E+02	9.4E-08	1.5E-02
P396	P/PCB	PCBs (total)	1336-36-3	B2	6	1	5.99E+00		5.6E+02	3.5E+02	1.1E-07	1.7E-02
P398	VOC	Acetone	67-64-1	ID	16	6	3.20E-02			2.7E+06		1.2E-08
P398	VOC	Benzene	71-43-2	A	16	4	5.40E-03		1.7E+03	5.8E+03	3.1E-11	9.3E-07
P398	VOC	2-Butanone	78-93-3	ID	16	8	3.60E-03			3.9E+06		9.3E-10
P398	VOC	Carbon Disulfide	75-15-0		16	1	1.60E-03			5.6E+04		2.8E-08
P398	VOC	Cyclohexane	110-82-7	ID	16	2	2.40E-03			5.8E+05		4.1E-09
P398	VOC	1,1-Dichloroethene	75-35-4	C	16	1	3.90E-03			2.0E+04		2.0E-07
P398	VOC	Ethyl Benzene	100-41-4	D	16	3	2.00E-03			3.5E+05		5.6E-09
P398	VOC	2-Hexanone	591-78-6		16	1	4.50E-03			5.7E+02		7.9E-06
P398	VOC	Toluene	108-88-3	D	16	9	7.90E-03			1.2E+05		6.7E-08
P398	VOC	Trichlorofluoromethane	75-69-4		16	1	6.50E-03			6.1E+04		1.1E-07
P398	VOC	Xylenes (total)	1330-20-7	ID	16	1	1.20E-03			4.5E+04		2.7E-08
P398	SVOC	Acenaphthene	83-32-9		16	5	1.10E-01			8.2E+05		1.3E-07
P398	SVOC	Acenaphthylene	208-96-8	D	16	2	8.70E-01			4.0E+05		2.2E-06
P398	SVOC	Anthracene	120-12-7	D	16	11	8.80E-01			5.4E+06		1.6E-07
P398	SVOC	Benzo(a)anthracene	56-55-3	B2	16	16	2.60E+00		1.7E+03		1.5E-08	
P398	SVOC	Benzo(a)pyrene	50-32-8	B2	16	16	2.70E+00		1.7E+02		1.6E-07	
P398	SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	16	4.75E+00		1.7E+03		2.8E-08	
P398	SVOC	Benzo(g,h,i)perylene	191-24-2	D	16	16	2.30E+00			5.3E+05		4.3E-06
P398	SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	16	1.90E+00		1.7E+04		1.1E-09	
P398	SVOC	Biphenyl	92-52-4	D	16	1	2.30E-02			6.9E+05		3.3E-08
P398	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	3	8.90E-02		9.5E+04	3.8E+05	9.4E-12	2.3E-07
P398	SVOC	Carbazole	86-74-8	B2	16	2	3.00E-02		6.4E+04		4.7E-12	
P398	SVOC	Chrysene	218-01-9	B2	16	16	2.50E+00		1.7E+05		1.5E-10	
P398	SVOC	Dibenz(a,h)anthracene	53-70-3	B2	16	14	7.10E-01		1.7E+02		4.2E-08	
P398	SVOC	Dibenzofuran	132-64-9	D	16	2	9.40E-02			7.2E+04		1.3E-06
P398	SVOC	Di-n-butylphthalate	84-74-2	D	16	3	3.70E-02			1.9E+06		1.9E-08
P398	SVOC	Fluoranthene	206-44-0	D	16	16	5.10E+00			6.9E+05		7.4E-06
P398	SVOC	Fluorene	86-73-7	D	16	3	3.10E-01			6.3E+05		4.9E-07
P398	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	16	16	2.05E+00		1.7E+03		1.2E-08	
P398	SVOC	2-Methylnaphthalene	91-57-6	ID	16	7	5.00E-02			1.4E+04		3.6E-06
P398	SVOC	Naphthalene	91-20-3	C	16	7	7.30E-02			1.2E+04		5.9E-06
P398	SVOC	Phenanthrene	85-01-8	D	16	15	2.00E+00			4.9E+05		4.1E-06
P398	SVOC	Pyrene	129-00-0	D	16	16	4.10E+00			5.2E+05		7.9E-06
P398	P/PCB	PCBs (total)	1336-36-3	B2	16	9	9.73E-02		5.6E+02	3.5E+02	1.7E-09	2.8E-04
P398	INORG	Aluminum	7429-90-5	D	16	16	2.24E+04	1.48E+04		2.2E+06		3.4E-03
P398	INORG	Antimony	7440-36-0		16	16	3.75E+00	4.40E-01		1.0E+04		3.3E-04
P398	INORG	Arsenic	7440-38-2	A	16	16	1.79E+01	1.13E+01	9.5E+02	7.0E+03	7.0E-08	9.5E-04
P398	INORG	Barium	7440-39-3	D	16	16	1.73E+02	8.38E+01		1.8E+06		5.0E-05
P398	INORG	Beryllium	7440-41-7	B1	16	16	3.40E+00	5.70E-01	1.4E+04	8.2E+03	2.0E-09	3.5E-04
P398	INORG	Cadmium	7440-43-9	B1	16	16	8.30E-01	5.52E-01	1.9E+04	1.8E+04	1.5E-10	1.5E-05
P398	INORG	Chromium (total)	7440-47-3		16	16	4.12E+01	2.82E+01	2.8E+03	7.7E+04	4.6E-08	1.7E-04
P398	INORG	Cobalt	7440-48-4	B1	16	16	1.82E+01	1.00E+01	1.2E+04	9.6E+03	6.7E-09	8.5E-04

Attachment B.16: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Soil Bedford, Indiana												
Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Soil Conc (0-10 ft) (mg/kg)	Site Specific Background (mg/kg)	Site-Specific Construction Worker Cancer Criteria (TR=10 ⁻⁵) (mg/kg)	Site-Specific Construction Worker NonCancer Criteria (HQ=1) (mg/kg)	Cancer Risk	HQ
P398	INORG	Copper	7440-50-8	D	16	16	2.15E+02	1.89E+01		1.0E+06		1.9E-04
P398	INORG	Cyanide (total)	57-12-5	D	16	1	1.90E-01			5.0E+05		3.8E-07
P398	INORG	Iron	7439-89-6	D	16	16	5.10E+04	2.44E+04		7.7E+06		3.5E-03
P398	INORG	Manganese	7439-96-5	D	16	16	1.51E+03	6.76E+02		2.4E+04		3.4E-02
P398	INORG	Mercury	7439-97-6	D	16	11	8.51E-01	7.05E-02		2.7E+03		2.9E-04
P398	INORG	Nickel	7440-02-0	A	16	16	5.07E+01	1.83E+01	1.4E+05	5.1E+05	2.3E-09	6.3E-05
P398	INORG	Selenium	7782-49-2	D	16	12	1.20E+00	3.96E-01		1.3E+05		6.4E-06
P398	INORG	Silver	7440-22-4	D	16	2	1.90E-01			4.7E+03		4.1E-05
P398	INORG	Thallium	7440-28-0		16	8	1.10E+00	8.40E-01		1.8E+03		1.5E-04
P398	INORG	Vanadium	7440-62-2		16	16	5.76E+01	4.18E+01		1.8E+05		8.9E-05
P398	INORG	Zinc	7440-66-6	D	16	16	2.47E+02	5.48E+01		7.6E+06		2.5E-05
P400	P/PCB	PCBs (total)	1336-36-3	B2	15	15	3.32E+00		5.6E+02	3.5E+02	5.9E-08	9.5E-03
Notes:												
1. Only constituents detected at each area are shown.												
2. Cancer risk and HQ are calculated using site-related concentrations, which are those in excess of site-specific background concentrations for inorganics.												
3. Carc class - EPA Weight-of-Evidence Cancer Classification												

A T T A C H M E N T B . 1 7

Exposure of Construction Workers to Off-Site Spring Water

**Attachment B.17: Upper-Bound Estimates of Risk and HQ for Construction Worker Exposure to Off-Site Spring Water
Bedford, Indiana**

Area	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Max Spring Water Conc (mg/L)	Site-Specific Construction Worker Water Contact Cancer Criteria (TR=10 ⁻⁵) (mg/L)	Site-Specific Construction Worker Water Contact Noncancer Criteria (HQ=1) (mg/L)	Cancer Risk	HQ
P027	P/PCB	PCBs (total)	1336-36-3	B2	4	1	1.11E-03	1.5E-02	9.4E-03	7.6E-07	1.2E-01
P384/P386	VOC	Benzene	71-43-2	A	1	1	1.70E-04	4.5E+00	1.5E+01	3.8E-10	1.1E-05
P384/P386	VOC	Ethyl Benzene	100-41-4	D	1	1	3.30E-04		4.2E+02		7.9E-07
P384/P386	VOC	Methyl tert-butyl ether	1634-04-4		1	1	3.50E-04	4.1E+02	2.1E+03	8.5E-12	1.7E-07
P384/P386	VOC	Toluene	108-88-3	D	1	1	9.10E-04		2.2E+02		4.1E-06
P384/P386	VOC	Xylenes (total)	1330-20-7	ID	1	1	4.40E-04		6.2E+01		7.1E-06
P384/P386	SVOC	Acenaphthene	83-32-9		1	1	9.50E-04		1.5E+02		6.6E-06
P384/P386	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1	1	3.50E-03	1.8E+00	7.3E+00	1.9E-08	4.8E-04
P384/P386	SVOC	2-Methylnaphthalene	91-57-6	ID	1	1	8.20E-04		2.4E+00		3.5E-04
P384/P386	SVOC	Naphthalene	91-20-3	C	1	1	4.30E-03		2.5E+00		1.7E-03
P384/P386	SVOC	Phenanthrene	85-01-8	D	1	1	9.90E-04		7.1E+01		1.4E-05
P384/P386	P/PCB	PCBs (total)	1336-36-3	B2	1	1	6.03E-04	1.5E-02	9.4E-03	4.1E-07	6.4E-02
P384/P386	INORG	Aluminum	7429-90-5	D	1	1	1.30E+00		3.1E+05		4.2E-06
P384/P386	INORG	Barium	7440-39-3	D	1	1	2.60E-01		2.2E+04		1.2E-05
P384/P386	INORG	Chromium (total)	7440-47-3		1	1	3.60E-03		5.6E+01		6.4E-05
P384/P386	INORG	Iron	7439-89-6	D	1	1	4.26E+01		9.2E+04		4.6E-04
P384/P386	INORG	Manganese	7439-96-5	D	1	1	3.10E+00		4.1E+03		7.6E-04
P384/P386	INORG	Mercury	7439-97-6	D	1	1	4.40E-04		2.6E-01		1.7E-03
P384/P386	INORG	Vanadium	7440-62-2		1	1	2.20E-03		1.4E+02		1.6E-05
P384/P386	INORG	Zinc	7440-66-6	D	1	1	1.00E-01		1.1E+05		9.1E-07
Note:											
1. Only constituents detected at each area are shown.											
2. Carc class - EPA Weight-of-Evidence Cancer Classification											

A T T A C H M E N T B . 1 8

Exposure to Lead in Soil and Spring Water

Attachment B.18: Mean Lead Concentrations in On-Site Soil GM Powertrain Bedford, Bedford, Indiana								
Area	Chem Group	Chemical	CASRN	Carc Class	Analyses	Locations	Surface (0-2 ft) Mean (mg/kg)	Depth-Average (0-10 ft) Mean (mg/kg)
A004	INORG	Lead	7439-92-1	B2	51	22	2.02E+01	8.81E+01
A021	INORG	Lead	7439-92-1	B2	68	26	8.73E+01	5.75E+01
A022	INORG	Lead	7439-92-1	B2	16	6	1.74E+01	1.86E+01
Notes:								
1. The mean lead concentrations in soil at AOI 22 do not include the concentration from location SS-X031Y124, identified in Table 4-2.								
2. The lead criteria for routine workers derived using the USEPA-recommended blood-lead level methodology range from 750 to 1750 mg/kg.								

Attachment B.18: Mean Lead Concentrations in Off-Site Soil Bedford, Indiana								
Area	Chem Group	Chemical	CASRN	Carc Class	Analyses	Locations	Surface (0-2 ft) Mean (mg/kg)	Depth-Average (0-10 ft) Mean (mg/kg)
P398	INORG	Lead	7439-92-1	B2	46	16	1.85E+02	1.24E+02
Note: The lead criterion for residential exposure derived using the USEPA-recommended blood-lead level methodology is 400 mg/kg.								

Attachment B.18: Empirical Model for Construction Worker Exposure to Groundwater Lead				
GM Powertrain Bedford Facility, Bedford, Indiana				
			USEPA (2004) Pregnant Workers	
Incidental Groundwater Ingestion				
Groundwater Pb concentration		mg-Pb/L-water	74	173
Gastrointestinal absorption	AF	unitless	0.2	0.2
Drinking Rate	DR	L-water/hour	0.005	0.005
Exposure Time	ET	hours	2	2
Fraction contaminated		unitless	1	1
Exposure frequency	EF	days/year	5	5
Averaging time	AT	days/year	365	365
Uptake of lead		mg-Pb/day	2.03E-03	4.74E-03
Uptake of lead		ug-Pb/day	2.03E+00	4.74E+00
Dermal Contact with Groundwater				
Groundwater Pb concentration		mg-Pb/L-water	74	173
Dermal permeability coefficient of compound in water	Kp	cm/hr	1.0E-04	1.0E-04
Event Time	t	hours	2	2
Events per Day	EV	1/day	1	1
Skin Surface Area	SA	cm ²	3,300	3,300
Exposure frequency	EF	days/year	5	5
Conversion factor		L/cm ³	1.0E-03	1.0E-03
Averaging time	AT	days	365	365
Uptake of lead		mg-Pb/day	6.69E-04	1.56E-03
Uptake of lead		ug-Pb/day	6.69E-01	1.56E+00
Total Uptake of Lead		ug-Pb/day	2.70	6.30
Baseline blood lead	PbB _{baseline}	ug-Pb/dL	2.2	1.7
Biokinetic slope factor	BSF	ug-Pb/dL per ug-Pb/day	0.4	0.4
Geometric std deviation	GSD		2.1	1.8
Ratio of fetal PbB to maternal PbB	R _{f/m}	unitless	0.9	0.9
Blood lead goal	PbB _{goal}	ug-Pb/dL	10	10
Groundwater Pb to meet PbB _{goal} at specific percentiles	z	Percentile	GW Pb (mg/L)	GW Pb (mg/L)
	0.000	50	611	646
	0.674	75	311	396
	1.036	85	202	298
	1.282	90	144	242
	1.645	95	74	173
	2.054	98	15	111
	2.326	99	-15	78
Notes:				
1. The model is adapted from the methodology provided in "Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks associated with Adult Exposure to Lead in Soil" (USEPA, 2003)				
2. The shaded values represent the range of the criterion.				
3. A negative groundwater Pb concentration indicates that (PbB _{baseline})(GSD _z) > PbB _{goal} .				

A T T A C H M E N T B . 1 9

Calculation of Area/Time-Weighted Concentrations

**Attachment B.19:
Procedure for Calculating Area- and Time-Weighted
Concentration of PCBs**

Area-Weighted Concentration

The following describes the procedure for calculating the area-weighted concentration of PCBs using Thiessen polygons to interpolate concentrations that have been measured at irregularly-spaced sample locations at a site. In this approach, the concentration of PCBs at any unsampled point at the site is estimated as the concentration of the nearest sample location.

The following are the steps for drawing the Thiessen polygons and calculating the area-weighted concentration of PCBs at a site.

Step 1: Identify the sample locations that are relevant to a particular site over which concentration data for PCBs are to be interpolated. Using Parcel 24 as an example, 12 sample locations with PCBs data from the surface soil were identified for interpolation, as shown in Attachment B.2.

Step 2: For each sample location, draw a line segment that connects the location with each adjacent sample location.

Step 3: Draw a perpendicular bisector for each line segment drawn in Step 2, and use the intersections of these bisectors (and their intersections with the site boundary) as the vertices of the polygons.

Step 4: Calculate the area of each Thiessen polygon A_i , and then calculate the total area A_T of the n polygons.

$$A_T = \sum_{i=1}^n A_i$$

Steps 1 to 4 are performed in ESRI geographic information system (GIS) software ArcView 3.2a using an ArcView extension for constructing Thiessen polygons that was obtained from the ESRI support website (<http://arcscrips.esri.com/details.asp?dbid=10107>).

For Parcel 24, the areas of the 12 polygons and the total area are shown on the attached tables. The total area of the polygons is approximately 251,000 ft². The polygons range in size from approximately 0.3% to 60% of the total area of Parcel 24.

Step 5: Calculate the area-weighted concentration as follows:

$$C = \sum_{i=1}^n C_i \frac{A_i}{A_T}$$

where C_i is the PCBs concentration at the i^{th} sample point.

For Parcel 24, these calculations are shown in the attached tables and give an area-weighted PCBs concentration of 3.01 mg/kg.

Area- and Time-Weighted Concentration

The area-weighted concentration calculated above assumes that a receptor population has equal probability of contact with all sampled points at a site. However, when the receptor population is known to be avoiding areas where concentrations of PCBs are higher than the 2 mg/kg screening criterion, the area-weighted concentration calculated above should be modified to account for a lower probability of contact with areas where concentrations are higher than 2 mg/kg.

Step 6: Determine the fraction (f) of the site affected by concentrations of PCBs higher than the 2 mg/kg screening criterion.

For Parcel 24, the fraction f is approximately 0.1, as shown in the attached tables. If a receptor has equal probability of contact with all parts of Parcel 24, the receptor would be expected to spend on average 10% of the time in areas with concentrations higher than 2 mg/kg and 90% of the time elsewhere on Parcel 24.

Step 7: Select a time factor (t_{in}) that represents the likelihood that the receptor will spend time in areas with concentrations higher than 2 mg/kg relative to the likelihood that the receptor will spend time in other areas. For example, a time factor of 1 would mean that the receptor has equal probability of spending time anywhere at the site. A time factor of 0.5 would mean that the receptor is half as likely to spend time in locations with concentrations higher than 2 mg/kg as other areas.

Step 8: Calculate the corresponding time factor (t_{out}) for the receptor's time spent outside of the areas with concentrations higher than 2 mg/kg from the following relationship:

$$t_{out}(1 - f) + t_{in} f = 1$$

As explained in Step 6, the terms f and $(1 - f)$ represent the probability that the receptor will encounter areas with concentrations higher than 2 mg/kg and areas with lower concentrations, respectively, if the receptor was equally likely to spend time anywhere at the property. The relationship between the time factors t_{out} and t_{in} ensures that the total time spent at the property (inside and outside of the areas with concentrations higher than 2 mg/kg) remains constant for all positive values of t_{in} and t_{out} .

For Parcel 24, t_{out} is calculated to be approximately 1.056 when t_{in} is 0.50, which means that the receptor is expected to spend on average approximately 5% (0.5×0.1) of the time in areas with concentrations higher than 2 mg/kg and approximately 95% (1.056×0.9) of the time elsewhere on the property. More realistically, t_{out} is calculated to be approximately 1.1 when t_{in} is 0.10, which means that the receptor is expected to spend on average approximately 1% (0.1×0.1) of the time in areas with concentrations higher than 2 mg/kg and approximately 99% (1.1×0.9) of the time elsewhere on the property

Step 9: Calculate the area- and time-weighted concentration as follows:

$$C = \sum_{i=1}^n C_i t_k \frac{A_i}{A_T}$$

where $t_k = t_{in}$ for $C_i > 2$ mg/kg, and $t_k = t_{out}$ for $C_i \leq 2$ mg/kg. Note that for $t_{in} = 1$ (which represents the case in which the receptor has equal probability of encountering any point at the site), the value of t_{out} equals 1 and the above equation becomes the same as the equation for calculating the area-weighted concentration.

For Parcel 24, a value of 0.5 and 0.1 for t_{in} gives an area- and time-weighted concentration of 1.54 mg/kg and 0.365 mg/kg, respectively, as shown on the attached tables.

**Attachment B.19: Calculation of Area/Time-Weighted Concentrations for Hypothetical Residential Exposure to Soil with Time Factor of 0.5 for Parcel 24
Bedford, Indiana**

Area	Boring ID	Area (ft ²)	Fraction of Area Associated with Sample	Chemical	Conc (mg/kg)	Area- Weighted Conc (mg/kg)	Area/Time Factor	Area/Time- Weighted Conc (mg/kg)
P024	024/078-577	3307	1.32E-02	PCBs (total)	1.02E+02	1.34E+00	6.59E-03	6.72E-01
P024	023/24/78-578	1337	5.33E-03	PCBs (total)	3.01E+01	1.60E-01	2.66E-03	8.01E-02
P024	024-2039	6605	2.63E-02	PCBs (total)	2.60E+01	6.84E-01	1.32E-02	3.42E-01
P024	023/24-585	3857	1.54E-02	PCBs (total)	2.60E+01	3.99E-01	7.68E-03	2.00E-01
P024	023/24-592	1777	7.08E-03	PCBs (total)	1.49E+01	1.06E-01	3.54E-03	5.28E-02
P024	024-586	4941	1.97E-02	PCBs (total)	1.01E+01	1.99E-01	9.85E-03	9.93E-02
P024	024/078-576	3332	1.33E-02	PCBs (total)	4.29E+00	5.69E-02	6.64E-03	2.85E-02
P024	024-593	1733	6.91E-03	PCBs (total)	4.15E-01	2.87E-03	7.29E-03	3.03E-03
P024	024-587	62867	2.51E-01	PCBs (total)	1.95E-01	4.89E-02	2.64E-01	5.17E-02
P024	024/078-575	5523	2.20E-02	PCBs (total)	1.10E-01	2.41E-03	2.32E-02	2.55E-03
P024	024-594	808	3.22E-03	PCBs (total)	1.70E-02	5.47E-05	3.40E-03	5.78E-05
P024	024-595	154841	6.17E-01	PCBs (total)	1.55E-02	9.56E-03	6.51E-01	1.01E-02
		Total:	1			3.01E+00	1	1.54E+00
Area fraction where conc is above screening criterion:					0.1002528			
Time factor within area where conc is above screening criterion:					0.5			
Time factor outside of area where conc is above screening criterion:					1.0557117			

**Attachment B.19: Calculation of Area/Time-Weighted Concentrations for Hypothetical Residential Exposure to Soil with a Time Factor of 0.1 in Parcel 24
Bedford, Indiana**

Area	Boring ID	Area (ft ²)	Fraction of Area Associated with Sample	Chemical	Conc (mg/kg)	Area- Weighted Conc (mg/kg)	Area/Time Factor	Area/Time- Weighted Conc (mg/kg)
P024	024/078-577	3307	1.32E-02	PCBs (total)	1.02E+02	1.34E+00	1.32E-03	1.34E-01
P024	023/24/78-578	1337	5.33E-03	PCBs (total)	3.01E+01	1.60E-01	5.33E-04	1.60E-02
P024	024-2039	6605	2.63E-02	PCBs (total)	2.60E+01	6.84E-01	2.63E-03	6.84E-02
P024	023/24-585	3857	1.54E-02	PCBs (total)	2.60E+01	3.99E-01	1.54E-03	3.99E-02
P024	023/24-592	1777	7.08E-03	PCBs (total)	1.49E+01	1.06E-01	7.08E-04	1.06E-02
P024	024-586	4941	1.97E-02	PCBs (total)	1.01E+01	1.99E-01	1.97E-03	1.99E-02
P024	024/078-576	3332	1.33E-02	PCBs (total)	4.29E+00	5.69E-02	1.33E-03	5.69E-03
P024	024-593	1733	6.91E-03	PCBs (total)	4.15E-01	2.87E-03	7.60E-03	3.15E-03
P024	024-587	62867	2.51E-01	PCBs (total)	1.95E-01	4.89E-02	2.76E-01	5.39E-02
P024	024/078-575	5523	2.20E-02	PCBs (total)	1.10E-01	2.41E-03	2.42E-02	2.65E-03
P024	024-594	808	3.22E-03	PCBs (total)	1.70E-02	5.47E-05	3.54E-03	6.02E-05
P024	024-595	154841	6.17E-01	PCBs (total)	1.55E-02	9.56E-03	6.79E-01	1.05E-02
		Total:	1			3.01E+00	1	3.65E-01
Area fraction where conc is above screening criterion:					0.1002528			
Time factor within area where conc is above screening criterion:					0.1			
Time factor outside of area where conc is above screening criterion:					1.100281			

A P P E N D I X C

Plant Procedures for Access Control

GM POWERTRAIN BEDFORD PLANT * INDICATES REVISION REVISER: Ken Hackney Requested by: K. Crame	STANDARD PROCEDURE <u>Site Access Restrictions Relating to Remediation Work</u> DRAFT COPY	PROC. NO. 5523-06 DATE ISSUED 1/14/2005 REVISION # 0 REVISION DATE

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PURPOSE: The purpose of this procedure is to communicate areas of the site property where access and activities are restricted to GM Bedford Plant employees or authorized plant contractors as a result of the ongoing remediation activities. In addition, this procedure specifies a process to evaluate and authorize access of GM Bedford Plant employees or authorized plant contractors to perform necessary work activities in these areas. GM WFG Remediation personnel, Conestoga-Rovers & Associate representatives and contractors retained to perform the environmental investigation and remediation are not restricted from this area and shall not have to obtain advance approval.

SCOPE: This procedure addresses restricted land on the main plant property identified as a result of ongoing environmental investigation and remediation. Maps within this procedure delineate the specific areas of concern. Signs will be placed and maintained at these areas indicating restricted access and fencing will be placed around these areas to delineate the restrictions until such time that they are no longer necessary. Access to this area by GM Bedford Plant employees or authorized plant contractors shall be approved by Environmental Staff prior to entry. A request to enter shall be based on a need to perform inspection or any necessary work. If access is granted, proper health and safety training and/or personal protection equipment may be required as a condition of such access.

RESPONSIBILITY:

It is the responsibility of Security to monitor restricted areas and limit access to these areas. It is the responsibility of Environmental to review requests to use restricted land with the necessary personnel to determine if request will be approved or denied. It is the responsibility of Environmental Staff (with assistance from other GM personnel as appropriate) to assess the need to suggest any specific training or personal protective equipment be used, considering the requested work activity, contact with environmental media and length of time within the restricted area.

GM POWERTRAIN BEDFORD PLANT * INDICATES REVISION REVISER: Ken Hackney Requested by: K. Crame	STANDARD PROCEDURE <u>Site Access Restrictions Relating to</u> <u>Remediation Work</u> DRAFT COPY	PROC. NO. 5523-06 DATE ISSUED 1/14/2005 REVISION # 0 REVISION DATE

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PROCEDURE:

1.0 Areas of Restricted Land Use

- 1.1 CRA and GM Remediation will maintain a map titled "Site Access Restrictions Related to Environmental Remediation Procedure – 5523-06". The most current version of this map can be obtained from the Environmental Department. This map delineates the areas of restricted land use on the main site property, as a result of remediation activities.

2.0 Permission For Bedford Plant Employees and Plant Contractors to Enter Restricted Land Areas

2.1 Previously Approved Activities

- 2.1.1 Remediation activities may be performed in restricted land areas under the current Remediation Health and Safety Plan (HASP), utilizing HAZWOPER trained personnel and using appropriate personal protective equipment (PPE) and procedures for decontamination, according to the HASP.

- 2.1.2 Lawn care activities may be performed in restricted land areas, without HAZWOPER training or PPE as long as no intrusive activities take place (ie. lawn mowing only).

- 2.2 For all other activities, not previously approved, requests must be provided to Security or Environmental.

- 2.3 Requests made to Security will be forwarded to Environmental Staff.

- 2.4 Environmental Staff will review the requested land use, and with assistance of other personnel, if necessary, determine if the use request will be approved or denied and if approved what training, PPE and procedures will be required. Information regarding the request and decision made will be documented in an email to the GM Remediation Group and GM Legal Staff.

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APPROVED BY:

Plant Manager Date

Production Manager Date

Manufacturing Eng. Manager Date

Personnel Director Date

